
# AMNS

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## Contents

# 1 Scientific Rationale and Main Objectives

The ITM has a broad need for data relating to atomic, molecular, nuclear and surface data (AMNS). In particular, AMNS data are needed in several of the ITM modelling projects. A consistent approach, taking into account the specific requirements of the ITM while maintaining the work aligned with other European efforts in this area, is therefore required. As a consequence the AMNS tasks are implemented as Tasks under the TF leadership and has the following scope:

- Coordination of the work in the four different sub areas.

- Supply of data not presently residing in easily accessible data bases.

- Identify any Intellectual Property Rights (IPR) protection needs in view of a broader collaboration with ITER partners.

- Provide software for delivery of AMNS data to ITM-TF codes

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# 3 AMNS tasks

The AMNS work is divided into two broad areas:

- The maintenance and development of the AMNS library (and the associated AMNS CPO) to provide access to AMNS data in the various languages used by the codes within the Work Package
- The addition to the AMNS database of AMNS data needed by the codes within the Work Package

# 4 AMNS Documentation

The AMNS library is meant to be called by Work Package codes if the codes need data for Atomic, Molecular, Nuclear or Surface processes. The calling sequence is described in more detail below, but the basic idea is: (1) initialize the package; (2) request data for a particular reaction by initializing a "table" for that reaction; (3) (repeatedly) requesting data for that reaction as a fuction of plasma or other parameters; (4) finishing with the table; and (5) finishing with the AMNS library.

The actual AMNS data is provided by CPOs stored under the "amns" tokamak and will first be searched for in the user's database, and if not found there, the system will default to obtaining the data from the public AMNS database. Multiple versions of the AMNS data are possible: in 4.09a and 4.09b this was done via a mysql database; in 4.10a and later this is done by having an index block stored in shot 0, run 1 of the AMNS CPO.

Some presentations:

- *Nuclear reactions* ( pdf [1]), by V. Kiptily
- *Simulations of the edge plasma: the role of atomic, molecular and surface physics* ( pdf [2]), by D. P. Coster, S. Gori, X. Bonnin, D.Reiter, A.Kukushkin, P. Krstic, P. Strand, L.-G. Eriksson, Contributors to the EFDA TF ITM
- *Atomic, Molecular, Surface and Nuclear (AMSN) data for the ITM-TF* ( pdf [3]), presented by D.P. Coster (IMP3 Leader) at the ADAS workshop, based on the talk given by Lars-Goran Eriksson at the ITM General Meeting, 2008-09
- *ITM AMNS Interface* ( pdf [4]), by D.P. Coster

Some papers:

[1] https://www.efda-itm.eu/ITM/imports/amns/public/Nuclear_reaction_list_AMNS_05-2011.pdf
[2] https://www.efda-itm.eu/ITM/imports/amns/public/ICAMDATA_2008_talk.pdf
[3] https://www.efda-itm.eu/ITM/imports/amns/public/AMNS_ADAS_2008.pdf
[4] https://www.efda-itm.eu/ITM/imports/amns/public/ITM_AMNS_Interface_2008-09.pdf

- *Simulations of the edge plasma: the role of atomic, molecular and surface physics* ( pdf [5]), by D.P. Coster, X. Bonnin, D. Reiter, A. Kukushkin, S. Gori, P. Krstic, P. Strand, L.-G. Eriksson and Contributors to the EFDA-TF-ITM

The present coding for the AMNS project is done in the gforge [6] amnsproto project [7].

## 4.1 AMNS User Interface

This section discusses the user interface to the AMNS subsystem.

The AMNS library is made available via a module - available versions can be found by executing

```
module avail amns
```

The include and library locations are specified via the "pkg-config" system. To display the available package names do

```
pkg-config --list-all | grep amns
```

Doxygen information about the user interface can be found here [8].

The AMNS library can be called from

1. Fortran
2. C
3. Python
4. Java (in development)
5. Matlab (in development)

The various bindings for the different languages are given below, but make use of a set of standard concepts which are described first.

### 4.1.1 AMNS User Interface Data Structures

A number of data structures are used by the library interface. Some are opaque (i.e. the contents are not of relevance to the user), and some need to be set or read by the user programme.

The two opaque types are handles which are returned by the setup routines and then need to be passed to the other routines:

1. amns_handle_type, used for the database wide routines
2. amns_handle_rx_type, used for the reaction specific routines

In some language bindings these are the basis of classes.

The non-opaque types are:

1. amns_error_type, used to indicate if an error occured and, if so, what the error was
2. amns_reaction_type, used to indicate the requested reaction
3. amns_set_type, used to set an AMNS internal parameter
4. amns_query_type, used to query an AMNS internal parameter
5. amns_answer_type, used to contain the answer from an AMNS query

[5] https://www.efda-itm.eu/ITM/imports/amns/public/ICAMDATA_2008_paper.pdf
[6] https://www.efda-itm.eu/ITM/html/itm_glossary.html#g_gforge
[7] https://gforge6.eufus.eu/project/amnsproto/
[8] https://portal.eufus.eu/documentation/ITM/doxygen/amns/amnsproto/User/4.10b/

6. amns_version_type, used to specify the AMNS version
7. amns_reactants_type, used to specify the reactants to a reaction
8. amns_reactant_type, a sub-component of amns_reactants_type used to characterize the individual reactants

The definitions of these data types can be found at the doxygen documentation for the AMNS User routines [9]

#### 4.1.2 AMNS User Interface Data Reactions

The currently available reactions specified in reaction_typex%string in the call to ITM_AMNS_SETUP_TABLE are

1. RC: Recombination (acd)
2. EI: Electron Impact Ionisation (scd)
3. CX: CX recombination coeffts (ccd)
4. BR: Recomb/brems power coeffts (prb)
5. LR: Line radiation (plt)
6. ZE: Effective Charge (zcd)
7. ZE2: Effective Square Charge (ycd)
8. EIP: Effective Ionisation Potential (ecd)
9. some nuclear reactions
10. ...

The actual reactions are listed in the AMNS section.

#### 4.1.3 AMNS User Interface Data Queries

The currently available queries for query%string in the call to ITM_AMNS_QUERY is

1. version: Return the version information

The currently available queries for query%string in the call to ITM_AMNS_QUERY_TABLE are

1. source: source (origin) of the data
2. no_of_reactants: number of tractants involved
3. index: Not sure what this is
4. filled: whether the data table has been filled (”Filled” or ”Empty”)
5. reaction_type: reaction type
6. reactants: nuclear charges of reactants
7. version: information about the version
8. state_label: label for the charge state (if appropriate)
9. result_unit: units of the result
10. result_label: description of the result

[9] https://portal.eufus.eu/documentation/ITM/doxygen/amns/amnsproto/User/4.10b/

#### 4.1.4 AMNS User Interface Data Setting Options

The currently setting options for set%string in the call to ITM_AMNS_SET is

1. NONE

The currently available setting options for set%string in the call to ITM_AMNS_SET_TABLE is

1. nowarn: deactivate warning when extrapolating

#### 4.1.5 FORTRAN AMNS User Interface

The fortran interface to the AMNS subsystem is based on a standardised set of calls to the AMNS library. The details of what lies behind these calls is the responsibility of the AMNS data providers and does not need to be understood by the users of the AMNS data.

The code modules devloped for the AMNS project are hosted in gforge [10] as the project amnsproto [11].

##### 4.1.5.1 AMNS User Interface: Fortran Calls

The 9 calls to the AMNS system are:

1. ITM_AMNS_SETUP, initialization call for the AMNS package

```
subroutine ITM_AMNS_SETUP(handle, version, error_status)
  optional version, error_status
  type(amns_handle_type), intent(out) :: handle
  type(amns_version_type), intent(in) :: version
  type(amns_error_type), intent(out) :: error_status
```

2. ITM_AMNS_QUERY, query routine for the AMNS package

```
subroutine ITM_AMNS_QUERY(handle,query,answer,error_status)
  optional error_status
  type(amns_handle_type), intent(in) :: handle
  type(amns_query_type), intent(in) :: query
  type(amns_answer_type), intent(out) :: answer
  type(amns_error_type), intent(out) :: error_status
```

3. ITM_AMNS_SET, set a parameter for the AMNS package

```
subroutine ITM_AMNS_SET(handle,set,error_status)
  optional error_status
  type(amns_handle_type), intent(in) :: handle
  type(amns_set_type), intent(in) :: set
  type(amns_error_type), intent(out) :: error_status
```

4. ITM_AMNS_FINISH, finalization call for the AMNS package

```
subroutine ITM_AMNS_FINISH(handle, error_status)
  optional error_status
  type(amns_handle_type), intent(inout) :: handle
  type(amns_error_type), intent(out) :: error_status
```

5. ITM_AMNS_SETUP_TABLE, initialization call for a particular reaction

[10] https://www.efda-itm.eu/ITM/html/itm_glossary.html#g_gforge
[11] https://gforge6.eufus.eu/project/amnsproto/

```
subroutine ITM_AMNS_SETUP_TABLE(handle, reaction_type, reactant, handle_rx, error_status)
  optional error_status
  type(amns_handle_type), intent(in) :: handle
  type(amns_reaction_type), intent(in) :: reaction_type
  type(amns_reactants_type), intent(in) :: reactant
  type(amns_handle_rx_type), intent(out) :: handle_rx
  type(amns_error_type), intent(out) :: error_status
```

6. ITM_AMNS_QUERY_TABLE, query routine for a particular reaction

```
subroutine ITM_AMNS_QUERY_TABLE(handle_rx,query,answer,error_status)
  optional error_status
  type(amns_handle_rx_type), intent(in) :: handle_rx
  type(amns_query_type), intent(in) :: query
  type(amns_answer_type), intent(out) :: answer
  type(amns_error_type), intent(out) :: error_status
```

7. ITM_AMNS_SET_TABLE, set a parameter for a particular reaction

```
subroutine ITM_AMNS_SET_TABLE(handle_rx,set,error_status)
  optional error_status
  type(amns_handle_rx_type), intent(in) :: handle_rx
  type(amns_set_type), intent(in) :: set
  type(amns_error_type), intent(out) :: error_status
```

8. ITM_AMNS_FINISH_TABLE, finalization call for a particular reaction

```
subroutine ITM_AMNS_FINISH_TABLE(handle_rx, error_status)
  optional error_status
  type(amns_handle_rx_type), intent(inout) :: handle_rx
  type(amns_error_type), intent(out) :: error_status
```

9. ITM_AMNS_RX, get the rates associated with the input args for a particular reaction

```
interface ITM_AMNS_RX
  module procedure ITM_AMNS_RX_1, ITM_AMNS_RX_2, ITM_AMNS_RX_3
end interface

subroutine ITM_AMNS_RX_1(handle_rx,out,arg1,arg2,arg3,error_status)
  optional arg2,arg3,error_status
  type(amns_handle_rx_type), intent(inout) :: handle_rx
  real (kind=R8), intent(out) :: out(:)
  real (kind=R8), intent(in) :: arg1(:),arg2(:),arg3(:)
  type(amns_error_type), intent(out) :: error_status

subroutine ITM_AMNS_RX_2(handle_rx,out,arg1,arg2,arg3,error_status)
  optional arg2,arg3,error_status
  type(amns_handle_rx_type), intent(inout) :: handle_rx
  real (kind=R8), intent(out) :: out(:,:)
  real (kind=R8), intent(in) :: arg1(:,:),arg2(:,:),arg3(:,:)
  type(amns_error_type), intent(out) :: error_status

subroutine ITM_AMNS_RX_3(handle_rx,out,arg1,arg2,arg3,error_status)
  optional arg2,arg3,error_status
  type(amns_handle_rx_type), intent(inout) :: handle_rx
  real (kind=R8), intent(out) :: out(:,:,:)
  real (kind=R8), intent(in) :: arg1(:,:,:),arg2(:,:,:),arg3(:,:,:)
  type(amns_error_type), intent(out) :: error_status
```

#### 4.1.5.2 AMNS User Interface Example (Fortran)

An example of the use of the code can be found in the ( fortran minimal example [12]):

```
program minimal
  use itm_types
  use amns_types
  use amns_module

  implicit none

  type (amns_handle_type) :: amns                              ! AMNS global handle
  type (amns_handle_rx_type)  :: amns_rx                       ! AMNS table handle
  type (amns_reaction_type) :: xx_rx
  type (amns_reactants_type) :: species
  real (kind=R8) :: te=100.0_R8, ne=1e20_R8, rate

  call ITM_AMNS_SETUP(amns)                                    ! set up the AMNS system
  allocate(species%components(4))                              ! set up reactants
  species%components = (/ amns_reactant_type(6, 1, 12, 0), &
                          amns_reactant_type(1, 0, 2, 0), &
                          amns_reactant_type(6, 0, 12, 1), &
                          amns_reactant_type(1, 1, 2, 1) /)
  xx_rx%string='CX'                                            ! set up reaction
  call ITM_AMNS_SETUP_TABLE(amns, xx_rx, species, amns_rx)     ! set up table
  call ITM_AMNS_RX(amns_rx, rate, te, ne)                      ! get results
  write(*,*) 'Rate = ', rate
  call ITM_AMNS_FINISH_TABLE(amns_rx)                          ! finish with table
  call ITM_AMNS_FINISH(amns)                                   ! finish with amns

end program minimal
```

#### 4.1.5.3 AMNS User Interface Example Fortran Makefile

An example Makefile demonstrating the use of the AMNS routines:

```
obj/minimal: src/minimal.f90
        ifort -g -o $@ $< ${shell eval-pkg-config --cflags --libs \
          amns-amd64_intel_12 itmtypes-amd64_intel_12 ual-amd64_intel_12}
```

Other examples can be found ( here [13]):

### 4.1.6 C AMNS User Interface

The C interface to the AMNS subsystem is based on a standardised set of calls to the AMNS library. The details of what lies behind these calls is the responsibility of the AMNS data providers and does not need to be understood by the users of the AMNS data.

The code modules devloped for the AMNS project are hosted in gforge [14] as the project amnsproto [15].

#### 4.1.6.1 AMNS User Interface: C Calls

The 9 calls to the AMNS system are:

1. ITM_AMNS_SETUP, initialization call for the AMNS package

[12] https://gforge6.eufus.eu/svn/amnsproto/tags/examples/fortran/
[13] https://gforge6.eufus.eu/svn/amnsproto/tags/examples/
[14] https://www.efda-itm.eu/ITM/html/itm_glossary.html#g_gforge
[15] https://gforge6.eufus.eu/project/amnsproto/

```
void ITM_AMNS_C_SETUP(void **handle_out, amns_error_type *error_status);
```

2. ITM_AMNS_QUERY, query routine for the AMNS package

```
void ITM_AMNS_C_QUERY(void *handle_in, amns_query_type *query,
                      amns_answer_type *answer, amns_error_type *error_status)
```

3. ITM_AMNS_SET, set a parameter for the AMNS package

```
void ITM_AMNS_C_SET(void *handle_in, amns_set_type *set, amns_error_type *error_status);
```

4. ITM_AMNS_FINISH, finalization call for the AMNS package

```
void ITM_AMNS_C_FINISH(void **handle_inout, amns_error_type *error_status);
```

5. ITM_AMNS_SETUP_TABLE, initialization call for a particular reaction

```
void ITM_AMNS_C_SETUP_TABLE(void *handle_in, amns_reaction_type *reaction_type,
                            void *reactant_handle_in, void **handle_rx_out,
                            amns_error_type *error_status);
```

6. ITM_AMNS_QUERY_TABLE, query routine for a particular reaction

```
void ITM_AMNS_C_QUERY_TABLE(void *handle_rx_in, amns_query_type *query,
                            amns_answer_type *answer, amns_error_type *error_status);
```

7. ITM_AMNS_SET_TABLE, set a parameter for a particular reaction

```
void ITM_AMNS_C_SET_TABLE(void *handle_rx_in, amns_set_type *set,
                          amns_error_type *error_status);
```

8. ITM_AMNS_FINISH_TABLE, finalization call for a particular reaction

```
void ITM_AMNS_C_FINISH_TABLE(void **handle_rx_inout, amns_error_type *error_status);
```

9. ITM_AMNS_RX, get the rates associated with the input args for a particular reaction

```
void ITM_AMNS_C_RX_0_A(void *handle_rx_in, double *out,
                       double arg1, amns_error_type *error_status);
void ITM_AMNS_C_RX_0_B(void *handle_rx_in, double *out,
                       double arg1, double arg2, amns_error_type *error_status);
void ITM_AMNS_C_RX_0_C(void *handle_rx_in, double *out,
                       double arg1, double arg2, double arg3, amns_error_type *error_s
tatus);

void ITM_AMNS_C_RX_1_A(void *handle_rx_in, int nx, double *out,
                       double *arg1, amns_error_type *error_status);
void ITM_AMNS_C_RX_1_B(void *handle_rx_in, int nx, double *out,
                       double *arg1, double *arg2, amns_error_type *error_status);
void ITM_AMNS_C_RX_1_C(void *handle_rx_in, int nx, double *out,
                       double *arg1, double *arg2, double *arg3, amns_error_ty
pe *error_status);

void ITM_AMNS_C_RX_2_A(void *handle_rx_in, int nx, int ny,
                       double *out, double *arg1, amns_error_type *error_status);
void ITM_AMNS_C_RX_2_B(void *handle_rx_in, int nx, int ny,
                       double *out, double *arg1, double *arg2, amns_error_type *error_status);
```

```
void ITM_AMNS_C_RX_2_C(void *handle_rx_in, int nx, int ny,
                       double *out, double *arg1, double *arg2, double *arg3, amns_error_type *er

void ITM_AMNS_C_RX_3_A(void *handle_rx_in, int nx, int ny, int nz,
                       double *out, double *arg1, amns_error_type *error_status);
void ITM_AMNS_C_RX_3_B(void *handle_rx_in, int nx, int ny, int nz,
                       double *out, double *arg1, double *arg2, amns_error_type *error_status);
void ITM_AMNS_C_RX_3_C(void *handle_rx_in, int nx, int ny, int nz,
                       double *out, double *arg1, double *arg2, double *arg3, amns_error_type *er
```

In addition, service routines are provided for dealing with reactants:

```
void ITM_AMNS_C_SETUP_REACTANTS(void **reactants_handle_out, char string_in[reaction_length],
                                int index_in, int n_react
ants);
void ITM_AMNS_C_SET_REACTANT(void *reactants_handle_in, int reactant_index, amns_reactant_type *reacta
void ITM_AMNS_C_GET_REACTANT(void *reactants_handle_in, int reactant_index, amns_reactant_type *reacta
void ITM_AMNS_C_FINISH_REACTANTS(void **reactants_handle_inout);
```

#### 4.1.6.2 AMNS User Interface Example (C)

An example of the use of the code can be found in the ( c minimal example [16]):

```
#include "amns_interface.h"

int main(int argc, char *argv[])
{
  void* amns_handle = NULL;
  amns_c_error_type error_stat = DEFAULT_AMNS_C_ERROR_TYPE;
  void* reactants_handle = NULL;
  amns_c_reactant_type species1  = {.ZN=6, .ZA=1, .MI=12, .LR=0};
  amns_c_reactant_type species2  = {.ZN=1, .ZA=0, .MI=2 , .LR=0};
  amns_c_reactant_type species3  = {.ZN=6, .ZA=0, .MI=12, .LR=1};
  amns_c_reactant_type species4  = {.ZN=1, .ZA=1, .MI=2 , .LR=1};
  amns_c_reaction_type xx_rx  = {.string = "CX"};
  void* amns_cx_handle;
  double rate;

  ITM_AMNS_CC_SETUP(&amns_handle, &error_stat);
  printf("error = %s: %s\n", error_stat.flag ? "true" : "false", error_stat.string);
  ITM_AMNS_CC_SETUP_REACTANTS(&reactants_handle, "", 0, 4);
  ITM_AMNS_CC_SET_REACTANT(reactants_handle, 1, &species1);
  ITM_AMNS_CC_SET_REACTANT(reactants_handle, 2, &species2);
  ITM_AMNS_CC_SET_REACTANT(reactants_handle, 3, &species3);
  ITM_AMNS_CC_SET_REACTANT(reactants_handle, 4, &species4);
  ITM_AMNS_CC_SETUP_TABLE(amns_handle, &xx_rx, reactants_handle, &amns_cx_handle, &error_stat);
  printf("error = %s: %s\n", error_stat.flag ? "true" : "false", error_stat.string);
  ITM_AMNS_CC_RX_0_B(amns_cx_handle, &rate, 100.0, 1e20, &error_stat);
  printf("error = %s: %s\n", error_stat.flag ? "true" : "false", error_stat.string);
  printf("rate=%e\n", rate);
  ITM_AMNS_CC_FINISH_TABLE(&amns_cx_handle, &error_stat);
  printf("error = %s: %s\n", error_stat.flag ? "true" : "false", error_stat.string);
  ITM_AMNS_CC_FINISH_REACTANTS(&reactants_handle);
  ITM_AMNS_CC_FINISH(&amns_handle, &error_stat);
  printf("error = %s: %s\n", error_stat.flag ? "true" : "false", error_stat.string);
  return 0;
}
```

[16] https://gforge6.eufus.eu/svn/amnsproto/tags/examples/c/

#### 4.1.6.3 AMNS User Interface Example C Makefile

An example Makefile demonstrating the use of the AMNS routines:

```
obj/minimal: src/minimal.c
        gcc -g -o $@ $< ${shell eval-pkg-config --cflags --libs\
          amns-ifort itmconstants ual-amd64_intel_12}
```

Other examples can be found ( here [17]):

### 4.1.7 Python AMNS User Interface

The Python interface to the AMNS subsystem is based on a standardised set of calls to the AMNS library. The details of what lies behind these calls is the responsibility of the AMNS data providers and does not need to be understood by the users of the AMNS data.

The code modules devloped for the AMNS project are hosted in gforge [18] as the project amnsproto [19].

#### 4.1.7.1 AMNS User Interface: Python Calls

The Python interface creates

1. Amns (class)
   (a) finalize (method)
   (b) get_table (method)
   (c) query (method)
   (d) set (method)
2. Table (class)
   (a) data (method)
   (b) finalize (method)
   (c) query (method)
   (d) set (method)
3. Reactants (class)
   (a) add (method)
   (b) test (method)
   (c) value (method)

#### 4.1.7.2 AMNS User Interface Example (Python)

An example of the use of the code can be found in the ( python minimal example [20]):

```
#! /usr/bin/env python
# -*- coding: utf-8 -*-
import amns
import numpy as np

amnsdb = amns.Amns()
r = amns.Reactants()
r.add(6,1,12)
r.add(1,0,2)
```

[17] https://gforge6.eufus.eu/svn/amnsproto/tags/examples/
[18] https://www.efda-itm.eu/ITM/html/itm_glossary.html#g_gforge
[19] https://gforge6.eufus.eu/project/amnsproto/
[20] https://gforge6.eufus.eu/svn/amnsproto/tags/examples/python/

```
r.add(6,0,12,lr=1)
r.add(1,1,2,lr=1)
table = amnsdb.get_table("CX", r)
print "table.no_of_reactants", table.no_of_reactants
print table.data(np.array([100.0]), np.array([1e20]))
amnsdb.finalize()
```

Other examples can be found ( here [21]):

---

last update: 2019-01-31 by g2dpc

## 4.2 AMNS Data Providers Documentation

A prototype code for generating an AMNS database from ADAS and nuclear can be found in gforge [22] as the project amnsproto [23] in the branches/adas_db area.

### 4.2.1 Doxygen generated documentation

So far the only documentation is the doxygen documentation for the AMNS Data Provider routines [24](follow the links to Files|File List|src/amns_driver.f90).

### 4.2.2 Tips/Comments

Here are some comments about the data provider driver:

- At the time of writing, the only data provided were atomic rate coefficients derived from ADAS and nuclear cross-sections for fusion.
- The relevant code can be found in the `amnsproto` project in GFORGE in branches/amns_db/src, with the driver `amns_driver.F90`
- Compilation is done by typing `make` in `branches/amns_db`
- The code can then be run by typing `obj/amns_driver`
- The backend can be chosen by specifying one of "mdsplus", "hdf5" or "ascii" on the command line when running `obj/amns_driver` (default is "mdsplus").
- The `amns_driver` program is driven by the file `amns_driver.data` whose format is described in the file `amns_driver.format` .
- To maintain the version information, a MySQL database was used for 4.09a and 4.09b. The database is updated by amns_driver when new data is written, and the database is used by the user interface routines to determine which "run" (version) number should be used for each "shot" (species). From 4.10a onwards, the version data is stored in an AMNS CPO under shot 0, run 1.

  The current status of this database can be queried from the Gateway by doing (note that this is only for pre-4.10a versions):

  ```
  mysql -h solps-mdsplus.aug.ipp.mpg.de -u amnsro -p amns
  amnsro
  select * from versions;
  quit;
  ```

  (i.e. accessing the "amns" database on the server "solps-mdsplus.aug.ipp.mpg.de" as user "amnsro"; the password is "amnsro").

-

[21] https://gforge6.eufus.eu/svn/amnsproto/tags/examples/
[22] https://www.efda-itm.eu/ITM/html/itm_glossary.html#g_gforge
[23] https://gforge6.eufus.eu/project/amnsproto/
[24] https://portal.eufus.eu/documentation/ITM/doxygen/amns/amnsproto/Provider/4.10b/

- 
- 
- 

#### 4.2.3 For New AMNS Data Providers

- If you haven't already done so, you will need to join the project "amnsproto", following the instructions contained here [25]. There will be a delay until the project manager adds you to the project, and gforge updates its tables.
- You will need to create your private user database

  ```
  $ITMSCRIPTDIR/create_user_itm_dir amns 4.10b
  ```

  replacing the `4.10b` with the appropriate version.
- Check out the AMNSPROTO repository

  ```
  svn co https://gforge6.eufus.eu/svn/amnsproto
  ```

  and then follow the instructions in the top level README

---

last update: 2019-01-31 by g2dpc

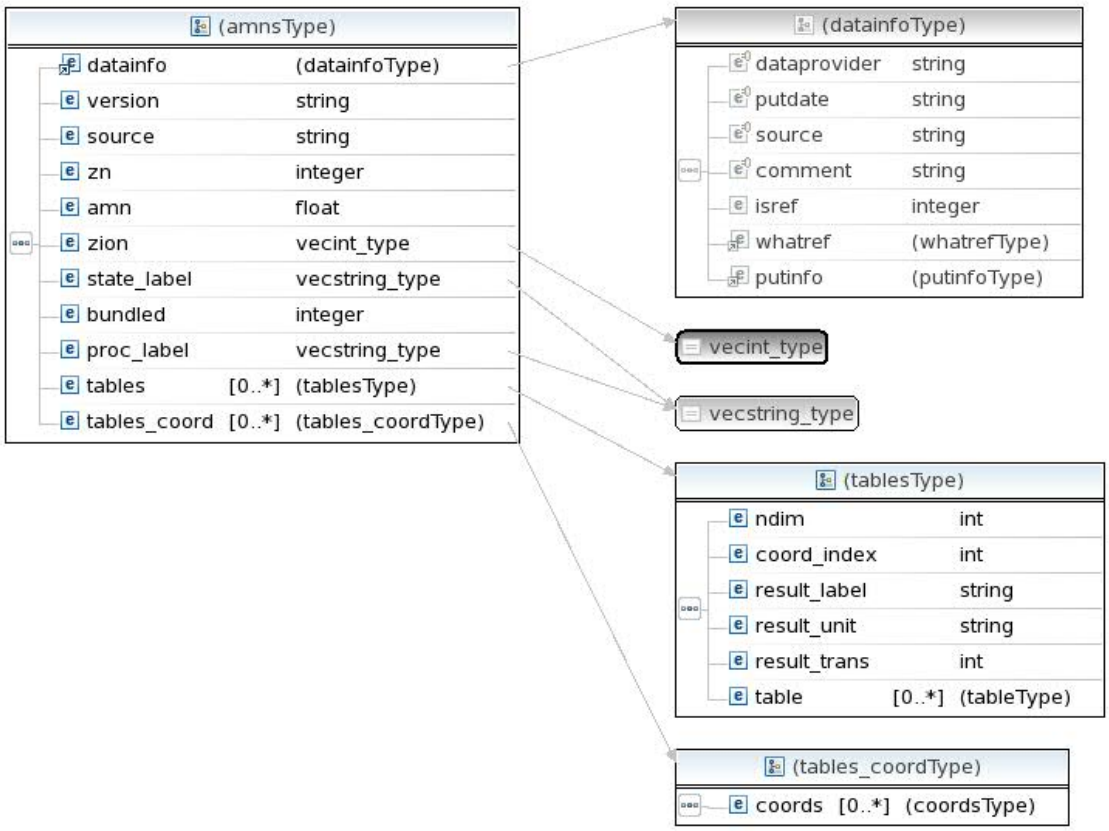
### 4.3 AMNS CPO

The current (4.08b) data structure for AMNS data in the standard tree view can be browsed here (Browse) [26]

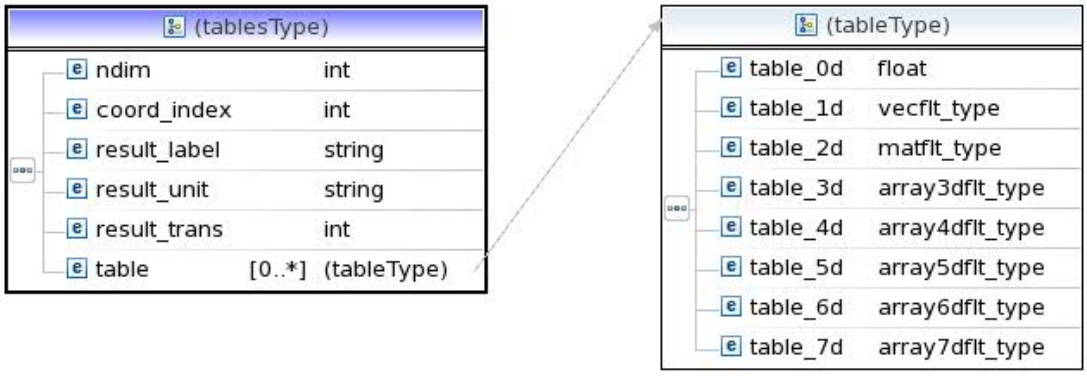
We are currently considering a revision of the AMNS data structure that makes use of arrays-of-structures (not available earlier)

At the top level we would have

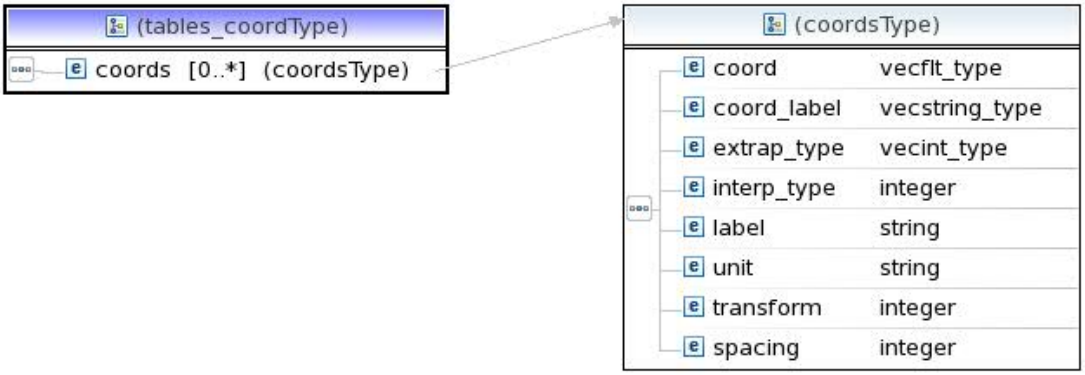
[25] https://www.efda-itm.eu/ITM/html/itm_howtos.html#join_project
[26] https://www.efda-itm.eu/ITM/imports/isip/public/data_structure/4.08b/Phase4top.html#Link00000003




with the definition of tables




and the tables of coordinates




last update: 2011-05-03 by coster

### 4.4 Significant events

- 
- 
- 
- ??: removal of the mysql interface for 4.10a and the storing of the version data under run 0, shot 1
- 2011-05-03: allow for writing an HDF5 version of the AMNS data
- 2011-04-26: added top level README to repository
- 2011-04-26: tags/library/4.09a version of the AMNS library routines
- 2011-04-26: tags/library/4.08b version of the AMNS library routines
- 2011-04-15: 4.09a version of the AMNS write routines
- 2011-04-13: mysql access routines added (used to store version numbers)
- 2010-12-14: (hopefully) generic version of carbon_db driven by adas_amns.data
- 2009-02-20: Moved the repository to the EFDA-ITM GForge system.

last update: 2019-01-31 by g2dpc

## 5 AMNS reactions 4.10a

Based on data from USER ”amnsdata”, using the CPO ”amns” and DATAVERSION ”4.10a”.
Prepared at 2012-07-03 11:13:18 UTC

### 5.1 Release 1

Description:

| ['latest version'] |
|---|

Date:

2012-04-18 22:32:58.078 +0200

### 5.1.1 Data for H

The data is stored in SHOT=1 RUN=1
Description:

['new version']

Charge and mass:

ZN=1
AMN=-9e+40

Version:

v0

Data source:

ADAS + ...

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.1.2 Data for 2-H

The data is stored in SHOT=2001 RUN=1
Description:

['new version']

Charge and mass:

ZN=1
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 2 | SI | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 2 | SI | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 2 | SI | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.1.3 Data for 3-H

The data is stored in SHOT=3001 RUN=1
Description:

['new version']

Charge and mass:

ZN=1
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 2 | SI | -1 | 1002 | | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.1.4 Data for He

The data is stored in SHOT=2 RUN=1
Description:

['new version']

Charge and mass:

ZN=2
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 3 | 2 | SI | 1 | 0 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | SI | 1 | 0 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | SI | 1 | 0 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |

### 5.1.5 Data for 3-He

The data is stored in SHOT=3002 RUN=1
Description:

['new version']

Charge and mass:

ZN=2
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 2 | SI | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.1.6 Data for Li

The data is stored in SHOT=3 RUN=1
Description:

['new version']

Charge and mass:

ZN=3
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.7 Data for Be

The data is stored in SHOT=4 RUN=1
Description:

['new version']

Charge and mass:

ZN=4
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.8 Data for B

The data is stored in SHOT=5 RUN=1
Description:

['new version']

Charge and mass:

ZN=5
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 6 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.9 Data for C

The data is stored in SHOT=6 RUN=1
Description:

['new version']

Charge and mass:

ZN=6
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |

### 5.1.10 Data for N

The data is stored in SHOT=7 RUN=1
Description:

['new version']

Charge and mass:

ZN=7
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.11 Data for O

The data is stored in SHOT=8 RUN=1
Description:

['new version']

Charge and mass:

ZN=8
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.12 Data for F

The data is stored in SHOT=9 RUN=1
Description:

['new version']

Charge and mass:

ZN=9
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.13 Data for Ne

The data is stored in SHOT=10 RUN=1
Description:

['new version']

Charge and mass:

ZN=10
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.14 Data for Al

The data is stored in SHOT=13 RUN=1
Description:

['new version']

Charge and mass:

ZN=13
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 14 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.1.15 Data for Si

The data is stored in SHOT=14 RUN=1
Description:

['new version']

Charge and mass:

ZN=14
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.1.16 Data for S

The data is stored in SHOT=16 RUN=1
Description:

['new version']

Charge and mass:

ZN=16
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.17 Data for Cl

The data is stored in SHOT=17 RUN=1
Description:

['new version']

Charge and mass:

ZN=17
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.18 Data for Ar

The data is stored in SHOT=18 RUN=1
Description:

['new version']

Charge and mass:

ZN=18
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.1.19 Data for Cr

The data is stored in SHOT=24 RUN=1
Description:

['new version']

Charge and mass:

ZN=24
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.1.20 Data for Fe

The data is stored in SHOT=26 RUN=1
Description:

['new version']

Charge and mass:

ZN=26
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 27 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.1.21 Data for Ni

The data is stored in SHOT=28 RUN=1
Description:

['new version']

Charge and mass:

ZN=28
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.1.22 Data for Cu

The data is stored in SHOT=29 RUN=1
Description:

['new version']

Charge and mass:

ZN=29
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.23 Data for Ge

The data is stored in SHOT=32 RUN=1
Description:

['new version']

Charge and mass:

ZN=32
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.1.24 Data for Kr

The data is stored in SHOT=36 RUN=1
Description:

['new version']

Charge and mass:

ZN=36
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.25 Data for Mo

The data is stored in SHOT=42 RUN=1
Description:

['new version']

Charge and mass:

ZN=42
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.1.26 Data for Xe

The data is stored in SHOT=54 RUN=1
Description:

['new version']

Charge and mass:

ZN=54
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 55 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.1.27 Data for W

The data is stored in SHOT=74 RUN=1
Description:

['new version']

Charge and mass:

ZN=74
AMN=-9e+40

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

## 5.2 Release 2

Description:

['latest version']

Date:

2012-05-30 13:04:05.151 +0200

### 5.2.1 Data for H

The data is stored in SHOT=1 RUN=2
Description:

['new version']

Charge and mass:

ZN=1
AMN=1.00794

Version:

v0

Data source:

ADAS + ...

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.2 Data for 2-H

The data is stored in SHOT=2001 RUN=2
Description:

['new version']

Charge and mass:

ZN=1
AMN=2.0

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 2 | SI | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 2 | SI | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 2 | SI | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.2.3 Data for 3-H

The data is stored in SHOT=3001 RUN=2
Description:

['new version']

Charge and mass:

ZN=1
AMN=3.0

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 2 | SI | -1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.2.4 Data for He

The data is stored in SHOT=2 RUN=2
Description:

['new version']

Charge and mass:

ZN=2
AMN=4.002602

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | SI | 1 | 1 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 3 | 2 | SI | 1 | 0 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | SI | 1 | 0 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | SI | 1 | 0 | | | | 1: Electron Tem<br>ture<br>2: Electron Dens |

### 5.2.5 Data for 3-He

The data is stored in SHOT=3002 RUN=2
Description:

['new version']

Charge and mass:

ZN=2
AMN=3.0

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 2 | SI | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.2.6 Data for Li

The data is stored in SHOT=3 RUN=2
Description:

['new version']

Charge and mass:

ZN=3
AMN=6.941

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.7 Data for Be

The data is stored in SHOT=4 RUN=2
Description:

['new version']

Charge and mass:

ZN=4
AMN=9.012182

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.8 Data for B

The data is stored in SHOT=5 RUN=2
Description:

['new version']

Charge and mass:

ZN=5
AMN=10.811

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 6 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.2.9 Data for C

The data is stored in SHOT=6 RUN=2
Description:

['new version']

Charge and mass:

ZN=6
AMN=12.011

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |

### 5.2.10 Data for N

The data is stored in SHOT=7 RUN=2
Description:

['new version']

Charge and mass:

ZN=7
AMN=14.00674

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.11 Data for O

The data is stored in SHOT=8 RUN=2
Description:

['new version']

Charge and mass:

ZN=8
AMN=15.9994

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.12 Data for F

The data is stored in SHOT=9 RUN=2
Description:

['new version']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.13 Data for Ne

The data is stored in SHOT=10 RUN=2
Description:

['new version']

Charge and mass:

ZN=10
AMN=20.1797

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.14 Data for Al

The data is stored in SHOT=13 RUN=2
Description:

['new version']

Charge and mass:

ZN=13
AMN=26.981539

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 14 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.2.15 Data for Si

The data is stored in SHOT=14 RUN=2
Description:

['new version']

Charge and mass:

ZN=14
AMN=28.0855

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.2.16 Data for S

The data is stored in SHOT=16 RUN=2
Description:

['new version']

Charge and mass:

ZN=16
AMN=32.066

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.17 Data for Cl

The data is stored in SHOT=17 RUN=2
Description:

['new version']

Charge and mass:

ZN=17
AMN=35.4527

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.18 Data for Ar

The data is stored in SHOT=18 RUN=2
Description:

['new version']

Charge and mass:

ZN=18
AMN=39.948

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.19 Data for Cr

The data is stored in SHOT=24 RUN=2
Description:

['new version']

Charge and mass:

ZN=24
AMN=51.9961

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.20 Data for Fe

The data is stored in SHOT=26 RUN=2
Description:

['new version']

Charge and mass:

ZN=26
AMN=55.847

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 27 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.2.21 Data for Ni

The data is stored in SHOT=28 RUN=2
Description:

['new version']

Charge and mass:

ZN=28
AMN=58.6934

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.2.22 Data for Cu

The data is stored in SHOT=29 RUN=2
Description:

['new version']

Charge and mass:

ZN=29
AMN=63.546

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.2.23 Data for Ge

The data is stored in SHOT=32 RUN=2
Description:

['new version']

Charge and mass:

ZN=32
AMN=72.61

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.24 Data for Kr

The data is stored in SHOT=36 RUN=2
Description:

['new version']

Charge and mass:

ZN=36
AMN=83.8

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 37 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture 2: Electron Dens |

### 5.2.25 Data for Mo

The data is stored in SHOT=42 RUN=2
Description:

['new version']

Charge and mass:

ZN=42
AMN=95.94

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.2.26 Data for Xe

The data is stored in SHOT=54 RUN=2
Description:

['new version']

Charge and mass:

ZN=54
AMN=131.29

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 55 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.2.27 Data for W

The data is stored in SHOT=74 RUN=2
Description:

['new version']

Charge and mass:

ZN=74
AMN=183.84

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | SI | 1 | 1 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | SI | 1 | 0 | | | | 1: Electron Tem ture<br>2: Electron Dens |

## 5.3 Release 3

Description:

['latest version']

Date:

2012-06-04 10:11:18.817 +0200

### 5.3.1 Data for H

The data is stored in SHOT=1 RUN=3
Description:

['new version']

Charge and mass:

ZN=1
AMN=1.00794

Version:

v0

Data source:

ADAS + ...

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.2 Data for 2-H

The data is stored in SHOT=2001 RUN=3
Description:

['new version']

Charge and mass:

ZN=1
AMN=2.0

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 2 | SI | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 2 | SI | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 2 | SI | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.3.3 Data for 3-H

The data is stored in SHOT=3001 RUN=3
Description:

['new version']

Charge and mass:

ZN=1
AMN=3.0

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 2 | SI | -1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.3.4 Data for He

The data is stored in SHOT=2 RUN=3
Description:

['new version']

Charge and mass:

ZN=2
AMN=4.002602

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.3.5 Data for 3-He

The data is stored in SHOT=3002 RUN=3
Description:

['new version']

Charge and mass:

ZN=2
AMN=3.0

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 2 | SI | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.3.6 Data for Li

The data is stored in SHOT=3 RUN=3
Description:

['new version']

Charge and mass:

ZN=3
AMN=6.941

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.7 Data for Be

The data is stored in SHOT=4 RUN=3
Description:

['new version']

Charge and mass:

ZN=4
AMN=9.012182

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.8 Data for B

The data is stored in SHOT=5 RUN=3
Description:

['new version']

Charge and mass:

ZN=5
AMN=10.811

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.9 Data for C

The data is stored in SHOT=6 RUN=3
Description:

['new version']

Charge and mass:

ZN=6
AMN=12.011

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |

### 5.3.10 Data for N

The data is stored in SHOT=7 RUN=3
Description:

['new version']

Charge and mass:

ZN=7
AMN=14.00674

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.11 Data for O

The data is stored in SHOT=8 RUN=3
Description:

['new version']

Charge and mass:

ZN=8
AMN=15.9994

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.12 Data for F

The data is stored in SHOT=9 RUN=3
Description:

['new version']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.13 Data for Ne

The data is stored in SHOT=10 RUN=3
Description:

['new version']

Charge and mass:

ZN=10
AMN=20.1797

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.14 Data for Al

The data is stored in SHOT=13 RUN=3
Description:

['new version']

Charge and mass:

ZN=13
AMN=26.981539

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.15 Data for Si

The data is stored in SHOT=14 RUN=3
Description:

['new version']

Charge and mass:

ZN=14
AMN=28.0855

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.16 Data for S

The data is stored in SHOT=16 RUN=3
Description:

['new version']

Charge and mass:

ZN=16
AMN=32.066

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.17 Data for Cl

The data is stored in SHOT=17 RUN=3
Description:

['new version']

Charge and mass:

ZN=17
AMN=35.4527

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.18 Data for Ar

The data is stored in SHOT=18 RUN=3
Description:

['new version']

Charge and mass:

ZN=18
AMN=39.948

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.19 Data for Cr

The data is stored in SHOT=24 RUN=3
Description:

['new version']

Charge and mass:

ZN=24
AMN=51.9961

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.20 Data for Fe

The data is stored in SHOT=26 RUN=3
Description:

['new version']

Charge and mass:

ZN=26
AMN=55.847

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.21 Data for Ni

The data is stored in SHOT=28 RUN=3
Description:

['new version']

Charge and mass:

ZN=28
AMN=58.6934

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.22 Data for Cu

The data is stored in SHOT=29 RUN=3
Description:

['new version']

Charge and mass:

ZN=29
AMN=63.546

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.23 Data for Ge

The data is stored in SHOT=32 RUN=3
Description:

['new version']

Charge and mass:

ZN=32
AMN=72.61

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.24 Data for Kr

The data is stored in SHOT=36 RUN=3
Description:

['new version']

Charge and mass:

ZN=36
AMN=83.8

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.25 Data for Mo

The data is stored in SHOT=42 RUN=3
Description:

['new version']

Charge and mass:

ZN=42
AMN=95.94

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.26 Data for Xe

The data is stored in SHOT=54 RUN=3
Description:

['new version']

Charge and mass:

ZN=54
AMN=131.29

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.3.27 Data for W

The data is stored in SHOT=74 RUN=3
Description:

['new version']

Charge and mass:

ZN=74
AMN=183.84

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |

## 5.4 Release 4

Description:

['latest version']

Date:

2012-06-05 12:19:53.773 +0200

### 5.4.1 Data for H

The data is stored in SHOT=1 RUN=4
Description:

['new version']

Charge and mass:

ZN=1
AMN=1.00794

Version:

v0

Data source:

ADAS + ...

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.4.2 Data for 2-H

The data is stored in SHOT=2001 RUN=4
Description:

['new version']

Charge and mass:

ZN=1
AMN=2.0

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 2 | SI | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 2 | SI | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 2 | SI | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.4.3 Data for 3-H

The data is stored in SHOT=3001 RUN=4
Description:

['new version']

Charge and mass:

ZN=1
AMN=3.0

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 2 | SI | -1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.4.4 Data for He

The data is stored in SHOT=2 RUN=4
Description:

['new version']

Charge and mass:

ZN=2
AMN=4.002602

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.4.5 Data for 3-He

The data is stored in SHOT=3002 RUN=4
Description:

['new version']

Charge and mass:

ZN=2
AMN=3.0

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 2 | SI | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature 2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature 2: Particle energ |

### 5.4.6 Data for Li

The data is stored in SHOT=3 RUN=4
Description:

['new version']

Charge and mass:

ZN=3
AMN=6.941

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.7 Data for Be

The data is stored in SHOT=4 RUN=4
Description:

['new version']

Charge and mass:

ZN=4
AMN=9.012182

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.4.8 Data for B

The data is stored in SHOT=5 RUN=4
Description:

['new version']

Charge and mass:

ZN=5
AMN=10.811

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.9 Data for C

The data is stored in SHOT=6 RUN=4
Description:

['new version']

Charge and mass:

ZN=6
AMN=12.011

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |
| 10 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 11 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.4.10 Data for N

The data is stored in SHOT=7 RUN=4
Description:

['new version']

Charge and mass:

ZN=7
AMN=14.00674

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.4.11 Data for O

The data is stored in SHOT=8 RUN=4
Description:

['new version']

Charge and mass:

ZN=8
AMN=15.9994

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.4.12 Data for F

The data is stored in SHOT=9 RUN=4
Description:

['new version']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.4.13 Data for Ne

The data is stored in SHOT=10 RUN=4
Description:

['new version']

Charge and mass:

ZN=10
AMN=20.1797

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.4.14 Data for Al

The data is stored in SHOT=13 RUN=4
Description:

['new version']

Charge and mass:

ZN=13
AMN=26.981539

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.15 Data for Si

The data is stored in SHOT=14 RUN=4
Description:

['new version']

Charge and mass:

ZN=14
AMN=28.0855

Version:

Data source:

| |
|---|
| |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.16 Data for S

The data is stored in SHOT=16 RUN=4
Description:

| |
|---|
| ['new version'] |

Charge and mass:

| |
|---|
| ZN=16<br>AMN=32.066 |

Version:

| |
|---|
| |

Data source:

| |
|---|
| |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.17 Data for Cl

The data is stored in SHOT=17 RUN=4
Description:

['new version']

Charge and mass:

ZN=17
AMN=35.4527

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.18 Data for Ar

The data is stored in SHOT=18 RUN=4
Description:

['new version']

Charge and mass:

ZN=18
AMN=39.948

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.4.19 Data for Cr

The data is stored in SHOT=24 RUN=4
Description:

['new version']

Charge and mass:

ZN=24
AMN=51.9961

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.4.20 Data for Fe

The data is stored in SHOT=26 RUN=4
Description:

['new version']

Charge and mass:

ZN=26
AMN=55.847

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.21 Data for Ni

The data is stored in SHOT=28 RUN=4
Description:

['new version']

Charge and mass:

ZN=28
AMN=58.6934

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.22 Data for Cu

The data is stored in SHOT=29 RUN=4
Description:

['new version']

Charge and mass:

ZN=29
AMN=63.546

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.23 Data for Ge

The data is stored in SHOT=32 RUN=4
Description:

['new version']

Charge and mass:

ZN=32
AMN=72.61

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.24 Data for Kr

The data is stored in SHOT=36 RUN=4
Description:

['new version']

Charge and mass:

ZN=36
AMN=83.8

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.25 Data for Mo

The data is stored in SHOT=42 RUN=4
Description:

['new version']

Charge and mass:

ZN=42
AMN=95.94

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.26 Data for Xe

The data is stored in SHOT=54 RUN=4
Description:

['new version']

Charge and mass:

ZN=54
AMN=131.29

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.4.27 Data for W

The data is stored in SHOT=74 RUN=4
Description:

['new version']

Charge and mass:

ZN=74
AMN=183.84

Version:

Data source:

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

## 5.5 Release 5

Description:

['AMNS data created by version 203 of the amns_driver system']

Date:

2012-06-05 18:15:08.155 +0200

### 5.5.1 Data for H

The data is stored in SHOT=1 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.5.2 Data for 2-H

The data is stored in SHOT=2001 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 2 | SI | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 2 | SI | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 2 | SI | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.5.3 Data for 3-H

The data is stored in SHOT=3001 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 2 | SI | -1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.5.4 Data for He

The data is stored in SHOT=2 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.5.5 Data for 3-He

The data is stored in SHOT=3002 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 2 | SI | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 2 | SI | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.5.6 Data for Li

The data is stored in SHOT=3 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

203

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.7 Data for Be

The data is stored in SHOT=4 RUN=5
Description:

| ['AMNS data created by version 203 of the amns_driver system'] |
|---|

Charge and mass:

| ZN=4<br>AMN=9.012182 |
|---|

Version:

| 203 |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.5.8 Data for B

The data is stored in SHOT=5 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.9 Data for C

The data is stored in SHOT=6 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |
| 10 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 11 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.5.10 Data for N

The data is stored in SHOT=7 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.5.11 Data for O

The data is stored in SHOT=8 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.5.12 Data for F

The data is stored in SHOT=9 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.13 Data for Ne

The data is stored in SHOT=10 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.5.14 Data for Al

The data is stored in SHOT=13 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.15 Data for Si

The data is stored in SHOT=14 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.16 Data for S

The data is stored in SHOT=16 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.17 Data for Cl

The data is stored in SHOT=17 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.18 Data for Ar

The data is stored in SHOT=18 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.5.19 Data for Cr

The data is stored in SHOT=24 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.20 Data for Fe

The data is stored in SHOT=26 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.21 Data for Ni

The data is stored in SHOT=28 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.22 Data for Cu

The data is stored in SHOT=29 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.23 Data for Ge

The data is stored in SHOT=32 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.24 Data for Kr

The data is stored in SHOT=36 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.25 Data for Mo

The data is stored in SHOT=42 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.26 Data for Xe

The data is stored in SHOT=54 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.5.27 Data for W

The data is stored in SHOT=74 RUN=5
Description:

['AMNS data created by version 203 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

203

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

## 5.6 Release 6

Description:

['AMNS data created by version 239 of the amns_driver system']

Date:

2012-06-27 15:30:09.501 +0200

### 5.6.1 Data for H

The data is stored in SHOT=1 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.6.2 Data for 2-H

The data is stored in SHOT=2001 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | SI | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | SI | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | SI | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | SI | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.6.3 Data for 3-H

The data is stored in SHOT=3001 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | SI | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | SI | -1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.6.4 Data for He

The data is stored in SHOT=2 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.6.5 Data for 3-He

The data is stored in SHOT=3002 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | SI | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | SI | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature 2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature 2: Particle energ |

### 5.6.6 Data for Li

The data is stored in SHOT=3 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.7 Data for Be

The data is stored in SHOT=4 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.6.8 Data for B

The data is stored in SHOT=5 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.9 Data for C

The data is stored in SHOT=6 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |
| 10 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 11 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.6.10 Data for N

The data is stored in SHOT=7 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.6.11 Data for O

The data is stored in SHOT=8 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.6.12 Data for F

The data is stored in SHOT=9 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.13 Data for Ne

The data is stored in SHOT=10 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.6.14 Data for Al

The data is stored in SHOT=13 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.15 Data for Si

The data is stored in SHOT=14 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.16 Data for S

The data is stored in SHOT=16 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.17 Data for Cl

The data is stored in SHOT=17 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.18 Data for Ar

The data is stored in SHOT=18 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.6.19 Data for Cr

The data is stored in SHOT=24 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.20 Data for Fe

The data is stored in SHOT=26 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.21 Data for Ni

The data is stored in SHOT=28 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.22 Data for Cu

The data is stored in SHOT=29 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.23 Data for Ge

The data is stored in SHOT=32 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.6.24 Data for Kr

The data is stored in SHOT=36 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.25 Data for Mo

The data is stored in SHOT=42 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.26 Data for Xe

The data is stored in SHOT=54 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.6.27 Data for W

The data is stored in SHOT=74 RUN=6
Description:

['AMNS data created by version 239 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

239

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle<br>2: Energy |

## 5.7 Release 7

Description:

['AMNS data created by version 243:247 of the amns_driver system']

Date:

2012-06-28 18:09:14.140 +0200

### 5.7.1 Data for H

The data is stored in SHOT=1 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_h.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_h.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_h.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_h.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.7.2 Data for 2-H

The data is stored in SHOT=2001 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | SI | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | SI | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | SI | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | SI | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature 2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature 2: Particle energ |

### 5.7.3 Data for 3-H

The data is stored in SHOT=3001 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | SI | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | SI | -1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.7.4 Data for He

The data is stored in SHOT=2 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | | | 1: Electron Tem<br>ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.7.5 Data for 3-He

The data is stored in SHOT=3002 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | SI | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | SI | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature 2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature 2: Particle energ |

### 5.7.6 Data for Li

The data is stored in SHOT=3 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.7 Data for Be

The data is stored in SHOT=4 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.7.8 Data for B

The data is stored in SHOT=5 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.9 Data for C

The data is stored in SHOT=6 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |
| 10 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 11 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.7.10 Data for N

The data is stored in SHOT=7 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.7.11 Data for O

The data is stored in SHOT=8 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.7.12 Data for F

The data is stored in SHOT=9 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.13 Data for Ne

The data is stored in SHOT=10 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.7.14 Data for Al

The data is stored in SHOT=13 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.15 Data for Si

The data is stored in SHOT=14 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.16 Data for S

The data is stored in SHOT=16 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.17 Data for Cl

The data is stored in SHOT=17 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.18 Data for Ar

The data is stored in SHOT=18 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.7.19 Data for Cr

The data is stored in SHOT=24 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.20 Data for Fe

The data is stored in SHOT=26 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.21 Data for Ni

The data is stored in SHOT=28 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.22 Data for Cu

The data is stored in SHOT=29 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.23 Data for Ge

The data is stored in SHOT=32 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.24 Data for Kr

The data is stored in SHOT=36 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.25 Data for Mo

The data is stored in SHOT=42 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.26 Data for Xe

The data is stored in SHOT=54 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.7.27 Data for W

The data is stored in SHOT=74 RUN=7
Description:

['AMNS data created by version 243:247 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

243:247

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

## 5.8 Release 8

Description:

['AMNS data created by version 248 of the amns_driver system']

Date:

2012-06-28 18:30:49.376 +0200

### 5.8.1 Data for H

The data is stored in SHOT=1 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.8.2 Data for 2-H

The data is stored in SHOT=2001 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | SI | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | SI | -1 | 1001 | | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | SI | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | SI | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.8.3 Data for 3-H

The data is stored in SHOT=3001 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | SI | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | SI | -1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.8.4 Data for He

The data is stored in SHOT=2 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

| |
|---|
| 248 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.8.5 Data for 3-He

The data is stored in SHOT=3002 RUN=8
Description:

| |
|---|
| ['AMNS data created by version 248 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=2<br>AMN=3.0 |

Version:

| |
|---|
| 248 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | SI | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | SI | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | SI | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.8.6 Data for Li

The data is stored in SHOT=3 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.8.7 Data for Be

The data is stored in SHOT=4 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_be.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_be.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_be.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_be.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_be.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_be.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_be.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.8.8 Data for B

The data is stored in SHOT=5 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.9 Data for C

The data is stored in SHOT=6 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |
| 10 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 11 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.8.10 Data for N

The data is stored in SHOT=7 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

| |
|---|
| 248 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.8.11 Data for O

The data is stored in SHOT=8 RUN=8
Description:

| |
|---|
| ['AMNS data created by version 248 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=8<br>AMN=15.9994 |

Version:

| |
|---|
| 248 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

#### 5.8.12 Data for F

The data is stored in SHOT=9 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.8.13 Data for Ne

The data is stored in SHOT=10 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.8.14 Data for Al

The data is stored in SHOT=13 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 14 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.15 Data for Si

The data is stored in SHOT=14 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.16 Data for S

The data is stored in SHOT=16 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.17 Data for Cl

The data is stored in SHOT=17 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.18 Data for Ar

The data is stored in SHOT=18 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.8.19 Data for Cr

The data is stored in SHOT=24 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.8.20 Data for Fe

The data is stored in SHOT=26 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.8.21 Data for Ni

The data is stored in SHOT=28 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.22 Data for Cu

The data is stored in SHOT=29 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.23 Data for Ge

The data is stored in SHOT=32 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.24 Data for Kr

The data is stored in SHOT=36 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 37 | 2 | SI | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.25 Data for Mo

The data is stored in SHOT=42 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.26 Data for Xe

The data is stored in SHOT=54 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.8.27 Data for W

The data is stored in SHOT=74 RUN=8
Description:

['AMNS data created by version 248 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

248

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | SI | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | SI | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

## 5.9 Release 9

Description:

['AMNS data created by version 251 of the amns_driver system']

Date:

2012-06-29 12:41:33.129 +0200

### 5.9.1 Data for H

The data is stored in SHOT=1 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.9.2 Data for 2-H

The data is stored in SHOT=2001 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3}.s^{-1} | 1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3}.s^{-1} | 1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^3/s | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^3/s | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.9.3 Data for 3-H

The data is stored in SHOT=3001 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3}.s^{-1} | 1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^3/s | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^3/s | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.9.4 Data for He

The data is stored in SHOT=2 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.9.5 Data for 3-He

The data is stored in SHOT=3002 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3}.s^{-1} | 1002 | | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^3/s | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^3/s | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.9.6 Data for Li

The data is stored in SHOT=3 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_li.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.7 Data for Be

The data is stored in SHOT=4 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.9.8 Data for B

The data is stored in SHOT=5 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | | | 1: Electron Temperature<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | | | 1: Electron Temperature<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | | | 1: Electron Temperature<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | | | 1: Electron Temperature<br>2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | | | 1: Electron Temperature<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | | | 1: Electron Temperature<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | | | 1: Electron Temperature<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | | | 1: Electron Temperature<br>2: Electron Dens |

### 5.9.9 Data for C

The data is stored in SHOT=6 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |
| 10 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 11 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.9.10 Data for N

The data is stored in SHOT=7 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.9.11 Data for O

The data is stored in SHOT=8 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.9.12 Data for F

The data is stored in SHOT=9 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.13 Data for Ne

The data is stored in SHOT=10 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.9.14 Data for Al

The data is stored in SHOT=13 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.15 Data for Si

The data is stored in SHOT=14 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 15 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.16 Data for S

The data is stored in SHOT=16 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.17 Data for Cl

The data is stored in SHOT=17 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.18 Data for Ar

The data is stored in SHOT=18 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.9.19 Data for Cr

The data is stored in SHOT=24 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.20 Data for Fe

The data is stored in SHOT=26 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.21 Data for Ni

The data is stored in SHOT=28 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.22 Data for Cu

The data is stored in SHOT=29 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.23 Data for Ge

The data is stored in SHOT=32 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.24 Data for Kr

The data is stored in SHOT=36 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W.m^{3} | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 37 | 2 | W.m^{3} | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.25 Data for Mo

The data is stored in SHOT=42 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.9.26 Data for Xe

The data is stored in SHOT=54 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.9.27 Data for W

The data is stored in SHOT=74 RUN=9
Description:

['AMNS data created by version 251 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

251

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3}.s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | W.m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^2 | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^2.sr^-1 | 10 | 1 | | | | 1: Angle 2: Energy |

## 5.10 Release 10

Description:

['AMNS data created by version 252 of the amns_driver system']

Date:

2012-06-29 13:09:29.758 +0200

### 5.10.1 Data for H

The data is stored in SHOT=1 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.10.2 Data for 2-H

The data is stored in SHOT=2001 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.10.3 Data for 3-H

The data is stored in SHOT=3001 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.10.4 Data for He

The data is stored in SHOT=2 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.10.5 Data for 3-He

The data is stored in SHOT=3002 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature 2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature 2: Particle energ |

### 5.10.6 Data for Li

The data is stored in SHOT=3 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.7 Data for Be

The data is stored in SHOT=4 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.10.8 Data for B

The data is stored in SHOT=5 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.9 Data for C

The data is stored in SHOT=6 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |
| 10 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 11 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.10.10 Data for N

The data is stored in SHOT=7 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_n.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_n.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_n.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_n.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_n.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_n.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_n.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.10.11 Data for O

The data is stored in SHOT=8 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_o.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_o.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_o.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_o.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_o.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_o.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_o.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.10.12 Data for F

The data is stored in SHOT=9 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.13 Data for Ne

The data is stored in SHOT=10 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

#### 5.10.14 Data for Al

The data is stored in SHOT=13 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.10.15 Data for Si

The data is stored in SHOT=14 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.10.16 Data for S

The data is stored in SHOT=16 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.17 Data for Cl

The data is stored in SHOT=17 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.18 Data for Ar

The data is stored in SHOT=18 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.10.19 Data for Cr

The data is stored in SHOT=24 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

### 5.10.20 Data for Fe

The data is stored in SHOT=26 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.21 Data for Ni

The data is stored in SHOT=28 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.10.22 Data for Cu

The data is stored in SHOT=29 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.10.23 Data for Ge

The data is stored in SHOT=32 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.24 Data for Kr

The data is stored in SHOT=36 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.25 Data for Mo

The data is stored in SHOT=42 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.26 Data for Xe

The data is stored in SHOT=54 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.10.27 Data for W

The data is stored in SHOT=74 RUN=10
Description:

['AMNS data created by version 252 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

252

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

## 5.11 Release 11 [DEFAULT]

Description:

['AMNS data created by version 252:255 of the amns_driver system']

Date:

2012-07-03 13:07:04.948 +0200

### 5.11.1 Data for H

The data is stored in SHOT=1 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle<br>2: Energy |

### 5.11.2 Data for 2-H

The data is stored in SHOT=2001 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | | |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | | |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.11.3 Data for 3-H

The data is stored in SHOT=3001 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

| |
|---|
| 252:255 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | | |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature<br>2: Particle energ |

### 5.11.4 Data for He

The data is stored in SHOT=2 RUN=11
Description:

| |
|---|
| ['AMNS data created by version 252:255 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=2<br>AMN=4.002602 |

Version:

| |
|---|
| 252:255 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | | | 1: Electron Tem ture<br>2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |
| 11 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf | | http://epsppd.epfl.ch/Warsaw/p | |

### 5.11.5 Data for 3-He

The data is stored in SHOT=3002 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | | |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | | |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature 2: Particle energ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | | | 1: Temperature 2: Particle energ |

### 5.11.6 Data for Li

The data is stored in SHOT=3 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_li.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.7 Data for Be

The data is stored in SHOT=4 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_be.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.11.8 Data for B

The data is stored in SHOT=5 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.9 Data for C

The data is stored in SHOT=6 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | YPHYS | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | | |
| 10 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 11 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.11.10 Data for N

The data is stored in SHOT=7 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_n.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.11.11 Data for O

The data is stored in SHOT=8 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_o.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

### 5.11.12 Data for F

The data is stored in SHOT=9 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.13 Data for Ne

The data is stored in SHOT=10 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ne.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |
| 11 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf | | http://epsppd.epfl.ch/Warsaw/p | |

### 5.11.14 Data for Al

The data is stored in SHOT=13 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.15 Data for Si

The data is stored in SHOT=14 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.16 Data for S

The data is stored in SHOT=16 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.17 Data for Cl

The data is stored in SHOT=17 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.11.18 Data for Ar

The data is stored in SHOT=18 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |
| 11 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf | | http://epsppd.epfl.ch/Warsaw/p | |

### 5.11.19 Data for Cr

The data is stored in SHOT=24 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.20 Data for Fe

The data is stored in SHOT=26 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.21 Data for Ni

The data is stored in SHOT=28 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.22 Data for Cu

The data is stored in SHOT=29 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.23 Data for Ge

The data is stored in SHOT=32 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | | | 1: Electron Tem ture 2: Electron Dens |

### 5.11.24 Data for Kr

The data is stored in SHOT=36 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf | | http://epsppd.epfl.ch/Warsaw/p | |

### 5.11.25 Data for Mo

The data is stored in SHOT=42 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

252:255

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | | | 1: Electron Tem ture 2: Electron Dens |

#### 5.11.26 Data for Xe

The data is stored in SHOT=54 RUN=11
Description:

| ['AMNS data created by version 252:255 of the amns_driver system'] |
|---|

Charge and mass:

| ZN=54<br>AMN=131.29 |
|---|

Version:

| 252:255 |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf | | http://epsppd.epfl.ch/Warsaw/p | |

#### 5.11.27 Data for W

The data is stored in SHOT=74 RUN=11
Description:

['AMNS data created by version 252:255 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

252:255

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE | PROVIDER | CITATION | COORD LABE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | | | 1: Electron Tem ture 2: Electron Dens |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | | | | 1: Energy |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | | | | 1: Angle 2: Energy |

# 6 AMNS reactions 4.10b (user public)

Based on data from USER ”public”, using the CPO ”amns” and DATAVERSION ”4.10b”.
Prepared at 2020-12-17 17:25:26 UTC

## 6.1 Release 1

Description:

['AMNS data created by version 399 of the amns_driver system']

Date:

2014-09-15 10:32:18.643 +0200

### 6.1.1 Data for H

The data is stored in SHOT=1 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 6.1.2 Data for 2-H

The data is stored in SHOT=2001 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 6.1.3 Data for 3-H

The data is stored in SHOT=3001 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 6.1.4 Data for He

The data is stored in SHOT=2 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.1.5 Data for 3-He

The data is stored in SHOT=3002 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 6.1.6 Data for Li

The data is stored in SHOT=3 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 6.1.7 Data for Be

The data is stored in SHOT=4 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H|D|T^{+0} \rightarrow Be^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 11 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_be_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_d _AE0_200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_d _AE0_11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_d _AE0_13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | prj_d _AE0_ 70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_ 50.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_ 3000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 25 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 140.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 14.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_d _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_d _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 22.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_h _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_h _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_h _AE0_ 100.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_h _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_h _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_h _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 43 | prj_he_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_kr_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_n _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_ne_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_o _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_10.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 50 | prj_t _AE0_15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_t _AE0_17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_t _AE0_13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_t _AE0_25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_t _AE0_11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_t _AE0_12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_xe_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 68 | prj_4he_AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 75 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_be _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_be _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_be _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_be _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_be _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_be _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_be _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_be _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_be _AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_d _AE0_11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_d _AE0_12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_d _AE0_13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_d _AE0_14.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_d _AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_d _AE0_17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 93 | prj_d _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 100 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_h _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_h _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_h _AE0_ 22.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_h _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_h _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 118 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 120 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_t _AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_t _AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_t _AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_t _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 125 | prj_t _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 6.1.8 Data for B

The data is stored in SHOT=5 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | prj_b _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 10 | prj_d _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 11 | prj_h _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_t _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_4he_AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_b _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_h _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 6.1.9 Data for C

The data is stored in SHOT=6 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | |
| 15 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_c _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_h _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_he_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_kr_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_n _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_ne_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 23 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 25 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_4he_AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_4he_AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_4he_AE0_ 27.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_4he_AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_4he_AE0_ 35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_4he_AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_4he_AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_4he_AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_4he_AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_4he_AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_4he_AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_4he_AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_4he_AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_4he_AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_4he_AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_4he_AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_4he_AE0_ 3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_4he_AE0_ 5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 48 | prj_4he_AE0_10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_4he_AE0_20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 50 | prj_c _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_c _AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_c _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_c _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_c _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_c _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_d _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_d _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_d _AE0_33.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_d _AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_d _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_d _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_d _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_d _AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_d _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_d _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_d _AE0_350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_d _AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_d _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_d _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_d _AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_d _AE0_10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 73 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 75 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_n _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_t _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_t _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 98 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 100 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 6.1.10 Data for N

The data is stored in SHOT=7 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 6.1.11 Data for O

The data is stored in SHOT=8 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 6.1.12 Data for F

The data is stored in SHOT=9 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

#### 6.1.13 Data for Ne

The data is stored in SHOT=10 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.1.14 Data for Al

The data is stored in SHOT=13 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 6.1.15 Data for Si

The data is stored in SHOT=14 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 6.1.16 Data for S

The data is stored in SHOT=16 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 6.1.17 Data for Cl

The data is stored in SHOT=17 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H|D|T^{+0} \rightarrow Cl^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 6.1.18 Data for Ar

The data is stored in SHOT=18 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.1.19 Data for Cr

The data is stored in SHOT=24 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 6.1.20 Data for Fe

The data is stored in SHOT=26 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H|D|T^{+0} \rightarrow Fe^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

#### 6.1.21 Data for Ni

The data is stored in SHOT=28 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 6.1.22 Data for Cu

The data is stored in SHOT=29 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 6.1.23 Data for Ge

The data is stored in SHOT=32 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 399 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 6.1.24 Data for Kr

The data is stored in SHOT=36 RUN=1
Description:

| |
|---|
| ['AMNS data created by version 399 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 399 |

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.1.25 Data for Mo

The data is stored in SHOT=42 RUN=1
Description:

| ['AMNS data created by version 399 of the amns_driver system'] |
|---|

Charge and mass:

| ZN=42<br>AMN=95.94 |
|---|

Version:

| 399 |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 6.1.26 Data for Xe

The data is stored in SHOT=54 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.1.27 Data for W

The data is stored in SHOT=74 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 19 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_270.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_350.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_d _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_h _AE0_ 2000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 550.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 900.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 800.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_t _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_t _AE0_ 170.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_t _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_t _AE0_ 180.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_t _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_t _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_t _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_w _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_4he_AE0_ 125.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 130.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 150.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_4he_AE0_ 1400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_ 5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_ 20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_4he_AE0_50000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_ar _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_ar _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_ar _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_ar _AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_ar _AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_ar _AE0_45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_ar _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_ar _AE0_55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_ar _AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_ar _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_ar _AE0_80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_ar _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_ar _AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_ar _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_ar _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_ar _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_ar _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_ar _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_ar _AE0_1005.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_ar _AE0_1050.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_ar _AE0_30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 270.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_d _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_d _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 550.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 120 | prj_h _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_h _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_h _AE0_ 900.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 125 | prj_h _AE0_ 4000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_h _AE0_ 40000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_h _AE0_ 80000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_kr _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_n _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_n _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_n _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_n _AE0_ 48.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 135 | prj_n _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 136 | prj_n _AE0_ 52.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 137 | prj_n _AE0_ 55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 138 | prj_n _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 139 | prj_n _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 140 | prj_n _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 141 | prj_n _AE0_ 90.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 142 | prj_n _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 143 | prj_n _AE0_ 120.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 144 | prj_n _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 145 | prj_n _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 146 | prj_n _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 147 | prj_n _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 148 | prj_n _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 149 | prj_ne _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 150 | prj_ne _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 151 | prj_ne _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 152 | prj_ne _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 153 | prj_ne _AE0_ 45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 154 | prj_ne _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 155 | prj_ne _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 156 | prj_ne _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 157 | prj_ne _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 158 | prj_ne _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 159 | prj_ne _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 160 | prj_ne _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 161 | prj_ne _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 162 | prj_ne _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 163 | prj_ne _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 164 | prj_ne _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 165 | prj_ne _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 166 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 167 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 168 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 169 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 170 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 171 | prj_t _AE0_ 160.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 172 | prj_t _AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 173 | prj_t _AE0_ 180.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 174 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 175 | prj_t _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 176 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 177 | prj_t _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 178 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 179 | prj_t _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 180 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 181 | prj_w _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 182 | prj_w _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 183 | prj_w _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 184 | prj_w _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 185 | prj_w _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 186 | prj_w _AE0_ 2500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 187 | prj_xe _AE0_ 9500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 188 | prj_xe _AE0_ 30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

## 6.2 Release 2

Description:

['AMNS data created by version 437 of the amns_driver system']

Date:

2014-12-17 13:14:57.113 +0100

### 6.2.1 Data for H

The data is stored in SHOT=1 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

| 437 |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 6.2.2 Data for 2-H

The data is stored in SHOT=2001 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 6.2.3 Data for 3-H

The data is stored in SHOT=3001 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 6.2.4 Data for He

The data is stored in SHOT=2 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.2.5 Data for 3-He

The data is stored in SHOT=3002 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 6.2.6 Data for Li

The data is stored in SHOT=3 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 6.2.7 Data for Be

The data is stored in SHOT=4 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 11 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_be_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_d _AE0_200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_d _AE0_11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_d _AE0_13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | prj_d _AE0_ 50.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_ 3000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 25 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 140.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 14.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_d _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_d _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 22.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_h _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_h _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_h _AE0_ 100.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_h _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_h _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_h _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 10.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 50 | prj_t _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_t _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_t _AE0_ 13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_t _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_t _AE0_ 11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_t _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 70 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 75 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_be _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_be _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_be _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_be _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_be _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_be _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_be _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_be _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_be _AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_d _AE0_11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_d _AE0_12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_d _AE0_13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_d _AE0_14.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_d _AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_d _AE0_17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_d _AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_d _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 95 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 100 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_h _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_h _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_h _AE0_ 22.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_h _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_h _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 120 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_t _AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_t _AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_t _AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_t _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 125 | prj_t _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

#### 6.2.8 Data for B

The data is stored in SHOT=5 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | prj_b _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 10 | prj_d _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 11 | prj_h _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_t _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_4he_AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_b _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_h _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 6.2.9 Data for C

The data is stored in SHOT=6 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_c _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_h _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_he_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_kr_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_n _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_ne_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_o _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_xe_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_4he_AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_4he_AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_4he_AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_4he_AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_4he_AE0_27.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_4he_AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_4he_AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_4he_AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_4he_AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_4he_AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_4he_AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_4he_AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_4he_AE0_2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_4he_AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_4he_AE0_5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_4he_AE0_10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_4he_AE0_20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_c _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_c _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_c _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_c _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_c _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_c _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_d _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_d _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_d _AE0_ 33.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_d _AE0_ 3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_d _AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_n _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_t _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_t _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 6.2.10 Data for N

The data is stored in SHOT=7 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H|D|T^{+0} \rightarrow N^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 6.2.11 Data for O

The data is stored in SHOT=8 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 6.2.12 Data for F

The data is stored in SHOT=9 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 6.2.13 Data for Ne

The data is stored in SHOT=10 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H|D|T^{+0} \rightarrow Ne^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.2.14 Data for Al

The data is stored in SHOT=13 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 6.2.15 Data for Si

The data is stored in SHOT=14 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 6.2.16 Data for S

The data is stored in SHOT=16 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 6.2.17 Data for Cl

The data is stored in SHOT=17 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 6.2.18 Data for Ar

The data is stored in SHOT=18 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.2.19 Data for Cr

The data is stored in SHOT=24 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H|D|T^{+0} \rightarrow Cr^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

#### 6.2.20 Data for Fe

The data is stored in SHOT=26 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H|D|T^{+0} \rightarrow Fe^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

#### 6.2.21 Data for Ni

The data is stored in SHOT=28 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 6.2.22 Data for Cu

The data is stored in SHOT=29 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H|D|T^{+0} \rightarrow Cu^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 6.2.23 Data for Ge

The data is stored in SHOT=32 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 437 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 6.2.24 Data for Kr

The data is stored in SHOT=36 RUN=2
Description:

| |
|---|
| ['AMNS data created by version 437 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 437 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.2.25 Data for Mo

The data is stored in SHOT=42 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 6.2.26 Data for Xe

The data is stored in SHOT=54 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.2.27 Data for W

The data is stored in SHOT=74 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 19 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_270.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_350.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_d _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_h _AE0_ 2000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 550.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 900.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 800.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_t _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_t _AE0_ 170.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_t _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_t _AE0_ 180.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_t _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_t _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_t _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_w _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_4he_AE0_ 125.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 130.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 150.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_4he_AE0_ 1400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_ 5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_ 20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_4he_AE0_50000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_ar _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_ar _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_ar _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_ar _AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_ar _AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_ar _AE0_45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_ar _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_ar _AE0_55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_ar _AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_ar _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_ar _AE0_80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_ar _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_ar _AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_ar _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_ar _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_ar _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_ar _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_ar _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_ar _AE0_1005.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_ar _AE0_1050.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_ar _AE0_30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 270.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_d _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_d _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 550.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 120 | prj_h _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_h _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_h _AE0_ 900.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 125 | prj_h _AE0_ 4000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_h _AE0_ 40000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_h _AE0_ 80000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_kr _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_n _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_n _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_n _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_n _AE0_ 48.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 135 | prj_n _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 136 | prj_n _AE0_ 52.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 137 | prj_n _AE0_ 55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 138 | prj_n _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 139 | prj_n _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 140 | prj_n _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 141 | prj_n _AE0_ 90.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 142 | prj_n _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 143 | prj_n _AE0_ 120.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 144 | prj_n _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 145 | prj_n _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 146 | prj_n _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 147 | prj_n _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 148 | prj_n _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 149 | prj_ne _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 150 | prj_ne _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 151 | prj_ne _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 152 | prj_ne _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 153 | prj_ne _AE0_ 45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 154 | prj_ne _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 155 | prj_ne _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 156 | prj_ne _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 157 | prj_ne _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 158 | prj_ne _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 159 | prj_ne _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 160 | prj_ne _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 161 | prj_ne _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 162 | prj_ne _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 163 | prj_ne _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 164 | prj_ne _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 165 | prj_ne _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 166 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 167 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 168 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 169 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 170 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 171 | prj_t _AE0_ 160.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 172 | prj_t _AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 173 | prj_t _AE0_ 180.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 174 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 175 | prj_t _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 176 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 177 | prj_t _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 178 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 179 | prj_t _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 180 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 181 | prj_w _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 182 | prj_w _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 183 | prj_w _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 184 | prj_w _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 185 | prj_w _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 186 | prj_w _AE0_ 2500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 187 | prj_xe _AE0_ 9500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 188 | prj_xe _AE0_ 30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

## 6.3 Release 3

Description:

['AMNS data created by version 438 of the amns_driver system']

Date:

2015-02-19 15:26:01.352 +0100

### 6.3.1 Data for H

The data is stored in SHOT=1 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

| 438 |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 6.3.2 Data for 2-H

The data is stored in SHOT=2001 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 6.3.3 Data for 3-H

The data is stored in SHOT=3001 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 6.3.4 Data for He

The data is stored in SHOT=2 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.3.5 Data for 3-He

The data is stored in SHOT=3002 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 6.3.6 Data for Li

The data is stored in SHOT=3 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 6.3.7 Data for Be

The data is stored in SHOT=4 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 11 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_be_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_d _AE0_200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_d _AE0_11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_d _AE0_13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | prj_d _AE0_ 50.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_ 3000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 25 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 140.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 14.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_d _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_d _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 22.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_h _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_h _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_h _AE0_ 100.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_h _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_h _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_h _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 10.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 50 | prj_t _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_t _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_t _AE0_ 13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_t _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_t _AE0_ 11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_t _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 70 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 75 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_be _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_be _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_be _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_be _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_be _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_be _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_be _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_be _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_be _AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_d _AE0_11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_d _AE0_12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_d _AE0_13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_d _AE0_14.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_d _AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_d _AE0_17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_d _AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_d _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 95 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 100 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_h _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_h _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_h _AE0_ 22.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_h _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_h _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 120 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_t _AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_t _AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_t _AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_t _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 125 | prj_t _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 6.3.8 Data for B

The data is stored in SHOT=5 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | prj_b _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 10 | prj_d _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 11 | prj_h _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_t _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_4he_AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_b _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_h _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 6.3.9 Data for C

The data is stored in SHOT=6 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_c _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_h _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_he_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_kr_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_n _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_ne_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_o _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_xe_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_4he_AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_4he_AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_4he_AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_4he_AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_4he_AE0_27.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_4he_AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_4he_AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_4he_AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_4he_AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_4he_AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_4he_AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_4he_AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_4he_AE0_2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_4he_AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_4he_AE0_5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_4he_AE0_10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_4he_AE0_20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_c _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_c _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_c _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_c _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_c _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_c _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_d _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_d _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_d _AE0_ 33.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_d _AE0_ 3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_d _AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_n _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_t _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_t _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 6.3.10 Data for N

The data is stored in SHOT=7 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H|D|T^{+0} \rightarrow N^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 6.3.11 Data for O

The data is stored in SHOT=8 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 6.3.12 Data for F

The data is stored in SHOT=9 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H|D|T^{+0} \rightarrow F^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 6.3.13 Data for Ne

The data is stored in SHOT=10 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H|D|T^{+0} \rightarrow Ne^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.3.14 Data for Al

The data is stored in SHOT=13 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 6.3.15 Data for Si

The data is stored in SHOT=14 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 6.3.16 Data for S

The data is stored in SHOT=16 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 6.3.17 Data for Cl

The data is stored in SHOT=17 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 6.3.18 Data for Ar

The data is stored in SHOT=18 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.3.19 Data for Cr

The data is stored in SHOT=24 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

#### 6.3.20 Data for Fe

The data is stored in SHOT=26 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

#### 6.3.21 Data for Ni

The data is stored in SHOT=28 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 6.3.22 Data for Cu

The data is stored in SHOT=29 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H|D|T^{+0} \rightarrow Cu^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 6.3.23 Data for Ge

The data is stored in SHOT=32 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 438 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 6.3.24 Data for Kr

The data is stored in SHOT=36 RUN=3
Description:

| |
|---|
| ['AMNS data created by version 438 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 438 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.3.25 Data for Mo

The data is stored in SHOT=42 RUN=3
Description:

| |
|---|
| ['AMNS data created by version 438 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=42<br>AMN=95.94 |

Version:

| |
|---|
| 438 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 6.3.26 Data for Xe

The data is stored in SHOT=54 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 6.3.27 Data for W

The data is stored in SHOT=74 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 19 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_270.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_350.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_d _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_h _AE0_ 2000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 550.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 900.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 800.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_t _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_t _AE0_ 170.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_t _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_t _AE0_ 180.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_t _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_t _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_t _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_w _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_4he_AE0_ 125.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 130.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 150.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_4he_AE0_ 1400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_ 5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_ 20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_4he_AE0_50000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_ar _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_ar _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_ar _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_ar _AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_ar _AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_ar _AE0_45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_ar _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_ar _AE0_55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_ar _AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_ar _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_ar _AE0_80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_ar _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_ar _AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_ar _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_ar _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_ar _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_ar _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_ar _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_ar _AE0_1005.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_ar _AE0_1050.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_ar _AE0_30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 270.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_d _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_d _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 550.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 120 | prj_h _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_h _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_h _AE0_ 900.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 125 | prj_h _AE0_ 4000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_h _AE0_ 40000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_h _AE0_ 80000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_kr _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_n _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_n _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_n _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_n _AE0_ 48.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 135 | prj_n _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 136 | prj_n _AE0_ 52.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 137 | prj_n _AE0_ 55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 138 | prj_n _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 139 | prj_n _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 140 | prj_n _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 141 | prj_n _AE0_ 90.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 142 | prj_n _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 143 | prj_n _AE0_ 120.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 144 | prj_n _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 145 | prj_n _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 146 | prj_n _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 147 | prj_n _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 148 | prj_n _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 149 | prj_ne _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 150 | prj_ne _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 151 | prj_ne _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 152 | prj_ne _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 153 | prj_ne _AE0_ 45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 154 | prj_ne _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 155 | prj_ne _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 156 | prj_ne _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 157 | prj_ne _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 158 | prj_ne _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 159 | prj_ne _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 160 | prj_ne _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 161 | prj_ne _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 162 | prj_ne _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 163 | prj_ne _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 164 | prj_ne _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 165 | prj_ne _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 166 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 167 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 168 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 169 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 170 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 171 | prj_t _AE0_ 160.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 172 | prj_t _AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 173 | prj_t _AE0_ 180.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 174 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 175 | prj_t _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 176 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 177 | prj_t _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 178 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 179 | prj_t _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 180 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 181 | prj_w _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 182 | prj_w _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 183 | prj_w _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 184 | prj_w _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 185 | prj_w _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 186 | prj_w _AE0_ 2500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 187 | prj_xe _AE0_ 9500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 188 | prj_xe _AE0_ 30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

## 6.4 Release 4

Description:

['AMNS data created by version 467 of the amns_driver system']

Date:

2015-07-20 18:02:16.161 +0200

### 6.4.1 Data for H

The data is stored in SHOT=1 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

| 467 |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 6.4.2 Data for 2-H

The data is stored in SHOT=2001 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 6.4.3 Data for 3-H

The data is stored in SHOT=3001 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |
| 2 | NUC_TT | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

### 6.4.4 Data for He

The data is stored in SHOT=2 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 6.4.5 Data for 3-He

The data is stored in SHOT=3002 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 6.4.6 Data for Li

The data is stored in SHOT=3 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 6.4.7 Data for Be

The data is stored in SHOT=4 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + He4 → Be |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + Kr → Be |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + N → Be |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + Ne → Be |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + O → Be |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + T → Be |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + Xe → Be |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + He → He |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + Be → Be |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + D → D |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + H → H |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 6.4.8 Data for B

The data is stored in SHOT=5 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature<br>2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat<br>K. Schmid<br>IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat<br>K. Schmid<br>IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat<br>K. Schmid<br>IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 6.4.9 Data for C

The data is stored in SHOT=6 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 6.4.10 Data for N

The data is stored in SHOT=7 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 6.4.11 Data for O

The data is stored in SHOT=8 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 6.4.12 Data for F

The data is stored in SHOT=9 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 6.4.13 Data for Ne

The data is stored in SHOT=10 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 6.4.14 Data for Al

The data is stored in SHOT=13 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 6.4.15 Data for Si

The data is stored in SHOT=14 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 6.4.16 Data for S

The data is stored in SHOT=16 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 6.4.17 Data for Cl

The data is stored in SHOT=17 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 6.4.18 Data for Ar

The data is stored in SHOT=18 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 6.4.19 Data for Cr

The data is stored in SHOT=24 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 6.4.20 Data for Fe

The data is stored in SHOT=26 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

#### 6.4.21 Data for Ni

The data is stored in SHOT=28 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 6.4.22 Data for Cu

The data is stored in SHOT=29 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 6.4.23 Data for Ge

The data is stored in SHOT=32 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 467 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 6.4.24 Data for Kr

The data is stored in SHOT=36 RUN=4
Description:

| |
|---|
| ['AMNS data created by version 467 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 467 |

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 6.4.25 Data for Mo

The data is stored in SHOT=42 RUN=4
Description:

| ['AMNS data created by version 467 of the amns_driver system'] |
|---|

Charge and mass:

| ZN=42<br>AMN=95.94 |
|---|

Version:

| 467 |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 6.4.26 Data for Xe

The data is stored in SHOT=54 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 6.4.27 Data for W

The data is stored in SHOT=74 RUN=4
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 6.5 Release 5

Description:

['AMNS data created by version 4.10b of the amns_driver system']

Date:

2019-04-01 15:08:36.247 +0200

### 6.5.1 Data for H

The data is stored in SHOT=1 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 6.5.2 Data for 4674

The data is stored in SHOT=4674 RUN=1
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=-999999999
AMN=-9e+40

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $D^{+1} + Be^{+4} + C^{+6} + W^{+74} \rightarrow D^{+1} + Be^{+4} + C^{+6}$ |
| 2 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $Be^{+4} + Be^{+4} + C^{+6} + W^{+74} \rightarrow Be^{+4} + Be^{+4} + C^{+6}$ |
| 3 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $C^{+6} + Be^{+4} + C^{+6} + W^{+74} \rightarrow C^{+6} + Be^{+4} + C^{+6}$ |
| 4 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $W^{+74} + Be^{+4} + C^{+6} + W^{+74} \rightarrow W^{+74} + Be^{+4} + C^{+}$ |

### 6.5.3 Data for 2-H

The data is stored in SHOT=2001 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

| |
|---|
| 656 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | reactivity for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | reactivity for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 6.5.4 Data for 3-H

The data is stored in SHOT=3001 RUN=5
Description:

| |
|---|
| ['AMNS data created by version 4.10b of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=1<br>AMN=3.0 |

Version:

| |
|---|
| 656 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | NUC_TT | reactivity for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |
| 5 | NUC_BB | cross section for T(T,2n)^4He | 1 | 1 | m^{2} | -1 | 1006 | | | $T + T \rightarrow 2n + He$ |
| 6 | NUC_TT | reactivity for tt T(T,2n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow 2n + He$ |

### 6.5.5 Data for He

The data is stored in SHOT=2 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 6.5.6 Data for 3-He

The data is stored in SHOT=3002 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | reactivity for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 6.5.7 Data for Li

The data is stored in SHOT=3 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 6.5.8 Data for Be

The data is stored in SHOT=4 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + He4 → Be |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + Kr → Be |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + N → Be |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + Ne → Be |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + O → Be |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + T → Be |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + Xe → Be |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + He → He |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + Be → Be |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + D → D |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + H → H |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 6.5.9 Data for B

The data is stored in SHOT=5 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature<br>2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat<br>K. Schmid<br>IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat<br>K. Schmid<br>IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat<br>K. Schmid<br>IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 6.5.10 Data for C

The data is stored in SHOT=6 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + He4 → C |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + Kr → C |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + N → C |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + Ne → C |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + O → C |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + T → C |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + Xe → C |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + He → He |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + C → C |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + D → D |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + H → H |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 6.5.11 Data for N

The data is stored in SHOT=7 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 6.5.12 Data for O

The data is stored in SHOT=8 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 6.5.13 Data for F

The data is stored in SHOT=9 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

#### 6.5.14 Data for Ne

The data is stored in SHOT=10 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 6.5.15 Data for Al

The data is stored in SHOT=13 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 6.5.16 Data for Si

The data is stored in SHOT=14 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 6.5.17 Data for S

The data is stored in SHOT=16 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 6.5.18 Data for Cl

The data is stored in SHOT=17 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 6.5.19 Data for Ar

The data is stored in SHOT=18 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 6.5.20 Data for Cr

The data is stored in SHOT=24 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 6.5.21 Data for Fe

The data is stored in SHOT=26 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 6.5.22 Data for Ni

The data is stored in SHOT=28 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 6.5.23 Data for Cu

The data is stored in SHOT=29 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 6.5.24 Data for Ge

The data is stored in SHOT=32 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 656 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 6.5.25 Data for Kr

The data is stored in SHOT=36 RUN=5
Description:

| |
|---|
| ['AMNS data created by version 4.10b of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 656 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 6.5.26 Data for Mo

The data is stored in SHOT=42 RUN=5
Description:

| |
|---|
| ['AMNS data created by version 4.10b of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=42<br>AMN=95.94 |

Version:

| |
|---|
| 656 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 6.5.27 Data for Xe

The data is stored in SHOT=54 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 6.5.28 Data for W

The data is stored in SHOT=74 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

656

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 6.6 Release 6 [DEFAULT]

Description:

['AMNS data created by version 4.10b of the amns_driver system']

Date:

2020-12-17 11:48:15.225 +0100

### 6.6.1 Data for H

The data is stored in SHOT=1 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 6.6.2 Data for 4674

The data is stored in SHOT=4674 RUN=2
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=-999999999
AMN=-9e+40

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $D^{+1} + Be^{+4} + C^{+6} + W^{+74} \rightarrow D^{+1} + Be^{+4} + C^{+6}$ |
| 2 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $Be^{+4} + Be^{+4} + C^{+6} + W^{+74} \rightarrow Be^{+4} + Be^{+4} + C^{+6}$ |
| 3 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $C^{+6} + Be^{+4} + C^{+6} + W^{+74} \rightarrow C^{+6} + Be^{+4} + C^{+6}$ |
| 4 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $W^{+74} + Be^{+4} + C^{+6} + W^{+74} \rightarrow W^{+74} + Be^{+4} + C^{+}$ |

### 6.6.3 Data for 2-H

The data is stored in SHOT=2001 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

| |
|---|
| 670 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | reactivity for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | reactivity for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 6.6.4 Data for 3-H

The data is stored in SHOT=3001 RUN=6
Description:

| |
|---|
| ['AMNS data created by version 4.10b of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=1<br>AMN=3.0 |

Version:

| |
|---|
| 670 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | NUC_TT | reactivity for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |
| 5 | NUC_BB | cross section for T(T,2n)^4He | 1 | 1 | m^{2} | -1 | 1006 | | | $T + T \rightarrow 2n + He$ |
| 6 | NUC_TT | reactivity for tt T(T,2n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + T \rightarrow 2n + He$ |

### 6.6.5 Data for He

The data is stored in SHOT=2 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 6.6.6 Data for 3-He

The data is stored in SHOT=3002 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | reactivity for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 6.6.7 Data for Li

The data is stored in SHOT=3 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 6.6.8 Data for Be

The data is stored in SHOT=4 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + He4 → Be |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + Kr → Be |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + N → Be |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + Ne → Be |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + O → Be |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + T → Be |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | Be + Xe → Be |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + He → He |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + Be → Be |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + D → D |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | Be + H → H |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 6.6.9 Data for B

The data is stored in SHOT=5 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature<br>2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat<br>K. Schmid<br>IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat<br>K. Schmid<br>IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat<br>K. Schmid<br>IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 6.6.10 Data for C

The data is stored in SHOT=6 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + He4 → C |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + Kr → C |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + N → C |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + Ne → C |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + O → C |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + T → C |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + Xe → C |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + He → He |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + C → C |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + D → D |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + H → H |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 6.6.11 Data for N

The data is stored in SHOT=7 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 6.6.12 Data for O

The data is stored in SHOT=8 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 6.6.13 Data for F

The data is stored in SHOT=9 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 6.6.14 Data for Ne

The data is stored in SHOT=10 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 6.6.15 Data for Al

The data is stored in SHOT=13 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 6.6.16 Data for Si

The data is stored in SHOT=14 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 6.6.17 Data for S

The data is stored in SHOT=16 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 6.6.18 Data for Cl

The data is stored in SHOT=17 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 6.6.19 Data for Ar

The data is stored in SHOT=18 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 6.6.20 Data for Cr

The data is stored in SHOT=24 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 6.6.21 Data for Fe

The data is stored in SHOT=26 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 6.6.22 Data for Ni

The data is stored in SHOT=28 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 6.6.23 Data for Cu

The data is stored in SHOT=29 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 6.6.24 Data for Ge

The data is stored in SHOT=32 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 670 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 6.6.25 Data for Kr

The data is stored in SHOT=36 RUN=6
Description:

| |
|---|
| ['AMNS data created by version 4.10b of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 670 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 6.6.26 Data for Mo

The data is stored in SHOT=42 RUN=6
Description:

| |
|---|
| ['AMNS data created by version 4.10b of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=42<br>AMN=95.94 |

Version:

| |
|---|
| 670 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 6.6.27 Data for Xe

The data is stored in SHOT=54 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 6.6.28 Data for W

The data is stored in SHOT=74 RUN=6
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

670

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt42/ plt42_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 3 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 3 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 3 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

# 7 AMNS reactions 4.10b (user g2dpc)

Based on data from USER ”g2dpc”, using the CPO ”amns” and DATAVERSION ”4.10b”.
Prepared at 2020-12-17 17:25:32 UTC

## 7.1 Release 1

Description:

['AMNS data created by version 399 of the amns_driver system']

Date:

2014-09-15 10:34:42.761 +0200

### 7.1.1 Data for H

The data is stored in SHOT=1 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.1.2 Data for 2-H

The data is stored in SHOT=2001 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 7.1.3 Data for 3-H

The data is stored in SHOT=3001 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 7.1.4 Data for He

The data is stored in SHOT=2 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.1.5 Data for 3-He

The data is stored in SHOT=3002 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 7.1.6 Data for Li

The data is stored in SHOT=3 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.1.7 Data for Be

The data is stored in SHOT=4 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 11 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_be_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_d _AE0_200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_d _AE0_11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_d _AE0_13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_50.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 21 | prj_d _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_ 3000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 25 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 140.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 14.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_d _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_d _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 22.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_h _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_h _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_h _AE0_ 100.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_h _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_h _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_h _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 46 | prj_ne_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_o _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_10.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 50 | prj_t _AE0_15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_t _AE0_17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_t _AE0_13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_t _AE0_25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_t _AE0_11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_t _AE0_12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_xe_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 71 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 75 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_be _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_be _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_be _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_be _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_be _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_be _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_be _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_be _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_be _AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_d _AE0_11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_d _AE0_12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_d _AE0_13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_d _AE0_14.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_d _AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_d _AE0_17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_d _AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_d _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_d _AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 96 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 100 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_h _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_h _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_h _AE0_ 22.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_h _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_h _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 120 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 121 | prj_t _AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_t _AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_t _AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_t _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 125 | prj_t _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 7.1.8 Data for B

The data is stored in SHOT=5 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | prj_b _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 10 | prj_d _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 11 | prj_h _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_t _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_4he_AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_b _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_h _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 7.1.9 Data for C

The data is stored in SHOT=6 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_c _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_h _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_he_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_kr_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_n _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_ne_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_o _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_xe_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_4he_AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_4he_AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_4he_AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_4he_AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_4he_AE0_27.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_4he_AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_4he_AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_4he_AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_4he_AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_4he_AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_4he_AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_4he_AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_4he_AE0_2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_4he_AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_4he_AE0_5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_4he_AE0_10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_4he_AE0_20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_c _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_c _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_c _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_c _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_c _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_c _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_d _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_d _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_d _AE0_ 33.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_d _AE0_ 3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_d _AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_n _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_t _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_t _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 7.1.10 Data for N

The data is stored in SHOT=7 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H|D|T^{+0} \rightarrow N^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | |

### 7.1.11 Data for O

The data is stored in SHOT=8 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.1.12 Data for F

The data is stored in SHOT=9 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.1.13 Data for Ne

The data is stored in SHOT=10 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.1.14 Data for Al

The data is stored in SHOT=13 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.1.15 Data for Si

The data is stored in SHOT=14 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.1.16 Data for S

The data is stored in SHOT=16 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.1.17 Data for Cl

The data is stored in SHOT=17 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.1.18 Data for Ar

The data is stored in SHOT=18 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.1.19 Data for Cr

The data is stored in SHOT=24 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

#### 7.1.20 Data for Fe

The data is stored in SHOT=26 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H|D|T^{+0} \rightarrow Fe^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

#### 7.1.21 Data for Ni

The data is stored in SHOT=28 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.1.22 Data for Cu

The data is stored in SHOT=29 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.1.23 Data for Ge

The data is stored in SHOT=32 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 399 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.1.24 Data for Kr

The data is stored in SHOT=36 RUN=1
Description:

| |
|---|
| ['AMNS data created by version 399 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 399 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.1.25 Data for Mo

The data is stored in SHOT=42 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.1.26 Data for Xe

The data is stored in SHOT=54 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.1.27 Data for W

The data is stored in SHOT=74 RUN=1
Description:

['AMNS data created by version 399 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

399

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 19 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_270.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_350.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_d _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_h _AE0_ 2000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 550.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 900.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 800.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_t _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_t _AE0_ 170.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_t _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_t _AE0_ 180.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_t _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_t _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_t _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_w _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_4he_AE0_ 125.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 130.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 150.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_4he_AE0_ 1400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_ 5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_ 20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_4he_AE0_50000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_ar _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_ar _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_ar _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_ar _AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_ar _AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_ar _AE0_45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_ar _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_ar _AE0_55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_ar _AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_ar _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_ar _AE0_80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_ar _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_ar _AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_ar _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_ar _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_ar _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_ar _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_ar _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_ar _AE0_1005.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_ar _AE0_1050.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_ar _AE0_30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 270.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_d _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_d _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 550.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 120 | prj_h _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_h _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_h _AE0_ 900.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 125 | prj_h _AE0_ 4000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_h _AE0_ 40000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_h _AE0_ 80000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_kr _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_n _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_n _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_n _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_n _AE0_ 48.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 135 | prj_n _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 136 | prj_n _AE0_ 52.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 137 | prj_n _AE0_ 55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 138 | prj_n _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 139 | prj_n _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 140 | prj_n _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 141 | prj_n _AE0_ 90.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 142 | prj_n _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 143 | prj_n _AE0_ 120.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 144 | prj_n _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 145 | prj_n _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 146 | prj_n _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 147 | prj_n _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 148 | prj_n _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 149 | prj_ne _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 150 | prj_ne _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 151 | prj_ne _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 152 | prj_ne _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 153 | prj_ne _AE0_ 45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 154 | prj_ne _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 155 | prj_ne _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 156 | prj_ne _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 157 | prj_ne _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 158 | prj_ne _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 159 | prj_ne _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 160 | prj_ne _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 161 | prj_ne _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 162 | prj_ne _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 163 | prj_ne _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 164 | prj_ne _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 165 | prj_ne _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 166 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 167 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 168 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 169 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 170 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 171 | prj_t _AE0_ 160.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 172 | prj_t _AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 173 | prj_t _AE0_ 180.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 174 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 175 | prj_t _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 176 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 177 | prj_t _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 178 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 179 | prj_t _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 180 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 181 | prj_w _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 182 | prj_w _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 183 | prj_w _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 184 | prj_w _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 185 | prj_w _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 186 | prj_w _AE0_ 2500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 187 | prj_xe _AE0_ 9500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 188 | prj_xe _AE0_ 30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

## 7.2 Release 2

Description:

['AMNS data created by version 437 of the amns_driver system']

Date:

2014-12-17 13:24:06.495 +0100

### 7.2.1 Data for H

The data is stored in SHOT=1 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

| 437 |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.2.2 Data for 2-H

The data is stored in SHOT=2001 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 7.2.3 Data for 3-H

The data is stored in SHOT=3001 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 7.2.4 Data for He

The data is stored in SHOT=2 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.2.5 Data for 3-He

The data is stored in SHOT=3002 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 7.2.6 Data for Li

The data is stored in SHOT=3 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.2.7 Data for Be

The data is stored in SHOT=4 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 11 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_be_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_d _AE0_200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_d _AE0_11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_d _AE0_13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | prj_d _AE0_ 50.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_ 3000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 25 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 140.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 14.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_d _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_d _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 22.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_h _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_h _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_h _AE0_ 100.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_h _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_h _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_h _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 10.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 50 | prj_t _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_t _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_t _AE0_ 13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_t _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_t _AE0_ 11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_t _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 70 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 75 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_be _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_be _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_be _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_be _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_be _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_be _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_be _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_be _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_be _AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_d _AE0_11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_d _AE0_12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_d _AE0_13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_d _AE0_14.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_d _AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_d _AE0_17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_d _AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_d _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 95 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 100 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_h _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_h _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_h _AE0_ 22.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_h _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_h _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 120 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_t _AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_t _AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_t _AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_t _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 125 | prj_t _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

#### 7.2.8 Data for B

The data is stored in SHOT=5 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | prj_b _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 10 | prj_d _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 11 | prj_h _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_t _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_4he_AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_b _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_h _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 7.2.9 Data for C

The data is stored in SHOT=6 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_c _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_h _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_he_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_kr_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_n _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_ne_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_o _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_xe_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_4he_AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_4he_AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_4he_AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_4he_AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_4he_AE0_27.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_4he_AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_4he_AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_4he_AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_4he_AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_4he_AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_4he_AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_4he_AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_4he_AE0_2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_4he_AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_4he_AE0_5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_4he_AE0_10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_4he_AE0_20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_c _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_c _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_c _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_c _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_c _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_c _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_d _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_d _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_d _AE0_ 33.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_d _AE0_ 3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_d _AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_n _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_t _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_t _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 7.2.10 Data for N

The data is stored in SHOT=7 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H|D|T^{+0} \rightarrow N^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.2.11 Data for O

The data is stored in SHOT=8 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.2.12 Data for F

The data is stored in SHOT=9 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H|D|T^{+0} \rightarrow F^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.2.13 Data for Ne

The data is stored in SHOT=10 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.2.14 Data for Al

The data is stored in SHOT=13 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.2.15 Data for Si

The data is stored in SHOT=14 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.2.16 Data for S

The data is stored in SHOT=16 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.2.17 Data for Cl

The data is stored in SHOT=17 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.2.18 Data for Ar

The data is stored in SHOT=18 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.2.19 Data for Cr

The data is stored in SHOT=24 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

#### 7.2.20 Data for Fe

The data is stored in SHOT=26 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

#### 7.2.21 Data for Ni

The data is stored in SHOT=28 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.2.22 Data for Cu

The data is stored in SHOT=29 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H|D|T^{+0} \rightarrow Cu^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.2.23 Data for Ge

The data is stored in SHOT=32 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 437 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.2.24 Data for Kr

The data is stored in SHOT=36 RUN=2
Description:

| |
|---|
| ['AMNS data created by version 437 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 437 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H|D|T^{+0} \rightarrow Kr^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.2.25 Data for Mo

The data is stored in SHOT=42 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.2.26 Data for Xe

The data is stored in SHOT=54 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.2.27 Data for W

The data is stored in SHOT=74 RUN=2
Description:

['AMNS data created by version 437 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

437

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 19 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_270.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_350.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_d _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_h _AE0_ 2000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 550.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 900.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 800.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_t _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_t _AE0_ 170.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_t _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_t _AE0_ 180.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_t _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_t _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_t _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_w _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_4he_AE0_ 125.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 130.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 150.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_4he_AE0_ 1400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_ 5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_ 20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_4he_AE0_50000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_ar _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_ar _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_ar _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_ar _AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_ar _AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_ar _AE0_45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_ar _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_ar _AE0_55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_ar _AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_ar _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_ar _AE0_80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_ar _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_ar _AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_ar _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_ar _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_ar _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_ar _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_ar _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_ar _AE0_1005.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_ar _AE0_1050.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_ar _AE0_30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 270.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_d _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_d _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 550.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 120 | prj_h _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_h _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_h _AE0_ 900.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 125 | prj_h _AE0_ 4000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_h _AE0_ 40000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_h _AE0_ 80000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_kr _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_n _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_n _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_n _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_n _AE0_ 48.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 135 | prj_n _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 136 | prj_n _AE0_ 52.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 137 | prj_n _AE0_ 55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 138 | prj_n _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 139 | prj_n _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 140 | prj_n _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 141 | prj_n _AE0_ 90.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 142 | prj_n _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 143 | prj_n _AE0_ 120.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 144 | prj_n _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 145 | prj_n _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 146 | prj_n _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 147 | prj_n _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 148 | prj_n _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 149 | prj_ne _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 150 | prj_ne _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 151 | prj_ne _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 152 | prj_ne _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 153 | prj_ne _AE0_ 45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 154 | prj_ne _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 155 | prj_ne _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 156 | prj_ne _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 157 | prj_ne _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 158 | prj_ne _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 159 | prj_ne _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 160 | prj_ne _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 161 | prj_ne _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 162 | prj_ne _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 163 | prj_ne _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 164 | prj_ne _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 165 | prj_ne _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 166 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 167 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 168 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 169 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 170 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 171 | prj_t _AE0_ 160.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 172 | prj_t _AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 173 | prj_t _AE0_ 180.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 174 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 175 | prj_t _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 176 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 177 | prj_t _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 178 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 179 | prj_t _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 180 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 181 | prj_w _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 182 | prj_w _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 183 | prj_w _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 184 | prj_w _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 185 | prj_w _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 186 | prj_w _AE0_ 2500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 187 | prj_xe _AE0_ 9500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 188 | prj_xe _AE0_ 30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

## 7.3 Release 3

Description:

['AMNS data created by version 438 of the amns_driver system']

Date:

2015-02-19 15:23:17.482 +0100

### 7.3.1 Data for H

The data is stored in SHOT=1 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

| 438 |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.3.2 Data for 2-H

The data is stored in SHOT=2001 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 7.3.3 Data for 3-H

The data is stored in SHOT=3001 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 7.3.4 Data for He

The data is stored in SHOT=2 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.3.5 Data for 3-He

The data is stored in SHOT=3002 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 7.3.6 Data for Li

The data is stored in SHOT=3 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.3.7 Data for Be

The data is stored in SHOT=4 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 11 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_be_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_d _AE0_200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_d _AE0_11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_d _AE0_13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | prj_d _AE0_ 50.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_ 3000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 25 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 140.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 14.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_d _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_d _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 40.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 70.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 22.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_h _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_h _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_h _AE0_ 100.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_h _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_h _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_h _AE0_ 30.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 10.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 20.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 50 | prj_t _AE0_ 15.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_t _AE0_ 17.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_t _AE0_ 13.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_t _AE0_ 25.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_t _AE0_ 11.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_t _AE0_ 12.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 70 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 75 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_be _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_be _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_be _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_be _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_be _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_be _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_be _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_be _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_be _AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_d _AE0_11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_d _AE0_12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_d _AE0_13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_d _AE0_14.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_d _AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_d _AE0_17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_d _AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_d _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 95 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 100 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_h _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_h _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_h _AE0_ 22.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_h _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_h _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 120 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_t _AE0_ 11.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_t _AE0_ 12.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_t _AE0_ 13.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_t _AE0_ 15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 125 | prj_t _AE0_ 17.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 7.3.8 Data for B

The data is stored in SHOT=5 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | prj_b _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 10 | prj_d _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 11 | prj_h _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 12 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 13 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 14 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 15 | prj_t _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_4he_AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_b _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_h _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 7.3.9 Data for C

The data is stored in SHOT=6 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 16 | prj_c _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 17 | prj_d _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 18 | prj_h _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 19 | prj_he_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_kr_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_n _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_ne_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_o _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_t _AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_xe_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_4he_AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_4he_AE0_15.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_4he_AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_4he_AE0_25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_4he_AE0_27.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_4he_AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_4he_AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_4he_AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_4he_AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_4he_AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_4he_AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_4he_AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_4he_AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_4he_AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_4he_AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_4he_AE0_400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_4he_AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_4he_AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_4he_AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_4he_AE0_2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_4he_AE0_3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_4he_AE0_5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_4he_AE0_10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_4he_AE0_20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_c _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_c _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_c _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_c _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_c _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_c _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_d _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_d _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_d _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_d _AE0_ 33.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_d _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_d _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_d _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_d _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_d _AE0_ 3000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_d _AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_h _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_h _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_h _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_n _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_t _AE0_ 25.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_t _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_t _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_t _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

### 7.3.10 Data for N

The data is stored in SHOT=7 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | |

### 7.3.11 Data for O

The data is stored in SHOT=8 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.3.12 Data for F

The data is stored in SHOT=9 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.3.13 Data for Ne

The data is stored in SHOT=10 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.3.14 Data for Al

The data is stored in SHOT=13 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.3.15 Data for Si

The data is stored in SHOT=14 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.3.16 Data for S

The data is stored in SHOT=16 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.3.17 Data for Cl

The data is stored in SHOT=17 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.3.18 Data for Ar

The data is stored in SHOT=18 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.3.19 Data for Cr

The data is stored in SHOT=24 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

#### 7.3.20 Data for Fe

The data is stored in SHOT=26 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

#### 7.3.21 Data for Ni

The data is stored in SHOT=28 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.3.22 Data for Cu

The data is stored in SHOT=29 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H|D|T^{+0} \rightarrow Cu^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.3.23 Data for Ge

The data is stored in SHOT=32 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 438 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.3.24 Data for Kr

The data is stored in SHOT=36 RUN=3
Description:

| |
|---|
| ['AMNS data created by version 438 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 438 |

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.3.25 Data for Mo

The data is stored in SHOT=42 RUN=3
Description:

| ['AMNS data created by version 438 of the amns_driver system'] |
|---|

Charge and mass:

| ZN=42<br>AMN=95.94 |
|---|

Version:

| 438 |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.3.26 Data for Xe

The data is stored in SHOT=54 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.3.27 Data for W

The data is stored in SHOT=74 RUN=3
Description:

['AMNS data created by version 438 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

438

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 19 | prj_ar_AE0_0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 20 | prj_d _AE0_270.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 21 | prj_d _AE0_250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 22 | prj_d _AE0_600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 23 | prj_d _AE0_1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 24 | prj_d _AE0_350.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | prj_d _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 26 | prj_d _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 27 | prj_d _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 28 | prj_d _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 29 | prj_h _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 30 | prj_h _AE0_ 2000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 31 | prj_h _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 32 | prj_h _AE0_ 550.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 33 | prj_h _AE0_ 600.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 34 | prj_h _AE0_ 900.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 35 | prj_h _AE0_ 800.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 36 | prj_he_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 37 | prj_kr_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 38 | prj_n _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 39 | prj_ne_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 40 | prj_o _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 41 | prj_t _AE0_ 700.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 42 | prj_t _AE0_ 170.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 43 | prj_t _AE0_ 300.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 44 | prj_t _AE0_ 180.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 45 | prj_t _AE0_ 400.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 46 | prj_t _AE0_ 1000.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 47 | prj_t _AE0_ 200.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 48 | prj_t _AE0_ 500.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 49 | prj_t _AE0_ 250.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | prj_w _AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 51 | prj_xe_AE0_ 0.000 | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | |
| 52 | prj_4he_AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 53 | prj_4he_AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 54 | prj_4he_AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 55 | prj_4he_AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 56 | prj_4he_AE0_ 125.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 57 | prj_4he_AE0_ 130.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 58 | prj_4he_AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 59 | prj_4he_AE0_ 150.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 60 | prj_4he_AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 61 | prj_4he_AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 62 | prj_4he_AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 63 | prj_4he_AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 64 | prj_4he_AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 65 | prj_4he_AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 66 | prj_4he_AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 67 | prj_4he_AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 68 | prj_4he_AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 69 | prj_4he_AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 70 | prj_4he_AE0_ 1400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 71 | prj_4he_AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 72 | prj_4he_AE0_ 5000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 73 | prj_4he_AE0_ 10000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 74 | prj_4he_AE0_ 20000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 75 | prj_4he_AE0_50000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 76 | prj_ar _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 77 | prj_ar _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 78 | prj_ar _AE0_30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 79 | prj_ar _AE0_35.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 80 | prj_ar _AE0_40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 81 | prj_ar _AE0_45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 82 | prj_ar _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 83 | prj_ar _AE0_55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 84 | prj_ar _AE0_60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 85 | prj_ar _AE0_70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 86 | prj_ar _AE0_80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 87 | prj_ar _AE0_100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 88 | prj_ar _AE0_140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 89 | prj_ar _AE0_200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 90 | prj_ar _AE0_300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 91 | prj_ar _AE0_500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 92 | prj_ar _AE0_700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 93 | prj_ar _AE0_1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 94 | prj_ar _AE0_1005.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 95 | prj_ar _AE0_1050.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 96 | prj_ar _AE0_30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 97 | prj_d _AE0_10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 98 | prj_d _AE0_20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 99 | prj_d _AE0_50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | prj_d _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 101 | prj_d _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 102 | prj_d _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 103 | prj_d _AE0_ 270.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 104 | prj_d _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 105 | prj_d _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 106 | prj_d _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 107 | prj_d _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 108 | prj_d _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 109 | prj_d _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 110 | prj_d _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 111 | prj_h _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 112 | prj_h _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 113 | prj_h _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 114 | prj_h _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 115 | prj_h _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 116 | prj_h _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 117 | prj_h _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 118 | prj_h _AE0_ 550.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 119 | prj_h _AE0_ 600.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 120 | prj_h _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 121 | prj_h _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 122 | prj_h _AE0_ 900.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 123 | prj_h _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 124 | prj_h _AE0_ 2000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 125 | prj_h _AE0_ 4000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 126 | prj_h _AE0_ 13333.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 127 | prj_h _AE0_ 26667.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 128 | prj_h _AE0_ 40000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 129 | prj_h _AE0_ 80000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 130 | prj_kr _AE0_ -42.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 131 | prj_n _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 132 | prj_n _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 133 | prj_n _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 134 | prj_n _AE0_ 48.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 135 | prj_n _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 136 | prj_n _AE0_ 52.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 137 | prj_n _AE0_ 55.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 138 | prj_n _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 139 | prj_n _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 140 | prj_n _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 141 | prj_n _AE0_ 90.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 142 | prj_n _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 143 | prj_n _AE0_ 120.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 144 | prj_n _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 145 | prj_n _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 146 | prj_n _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 147 | prj_n _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 148 | prj_n _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 149 | prj_ne _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 150 | prj_ne _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 151 | prj_ne _AE0_ 30.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 152 | prj_ne _AE0_ 40.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 153 | prj_ne _AE0_ 45.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 154 | prj_ne _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 155 | prj_ne _AE0_ 60.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 156 | prj_ne _AE0_ 70.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 157 | prj_ne _AE0_ 80.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 158 | prj_ne _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 159 | prj_ne _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 160 | prj_ne _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 161 | prj_ne _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 162 | prj_ne _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 163 | prj_ne _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 164 | prj_ne _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 165 | prj_ne _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 166 | prj_t _AE0_ 10.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 167 | prj_t _AE0_ 20.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 168 | prj_t _AE0_ 50.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 169 | prj_t _AE0_ 100.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 170 | prj_t _AE0_ 140.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 171 | prj_t _AE0_ 160.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 172 | prj_t _AE0_ 170.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 173 | prj_t _AE0_ 180.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 174 | prj_t _AE0_ 200.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 175 | prj_t _AE0_ 250.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 176 | prj_t _AE0_ 300.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 177 | prj_t _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 178 | prj_t _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 179 | prj_t _AE0_ 700.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 180 | prj_t _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 181 | prj_w _AE0_ 350.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 182 | prj_w _AE0_ 400.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 183 | prj_w _AE0_ 500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 184 | prj_w _AE0_ 800.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 185 | prj_w _AE0_ 1000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 186 | prj_w _AE0_ 2500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 187 | prj_xe _AE0_ 9500.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |
| 188 | prj_xe _AE0_ 30000.000 | Reflection yield | 1 | 1 | NA | -1 | 0 | | | |

## 7.4 Release 4

Description:

['AMNS data created by version 456 of the amns_driver system']

Date:

2015-06-29 14:00:37.746 +0200

### 7.4.1 Data for H

The data is stored in SHOT=1 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

| 456 |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.4.2 Data for 2-H

The data is stored in SHOT=2001 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 7.4.3 Data for 3-H

The data is stored in SHOT=3001 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 7.4.4 Data for He

The data is stored in SHOT=2 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.4.5 Data for 3-He

The data is stored in SHOT=3002 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 7.4.6 Data for Li

The data is stored in SHOT=3 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.4.7 Data for Be

The data is stored in SHOT=4 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 11 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $be^{+4} + ar^{+18} \rightarrow be^{+4}$ |
| 12 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $be^{+4} + be^{+4} \rightarrow be^{+4}$ |
| 13 | SPUT | Physical sputtering yield | 18 | 1 | NA | -1 | 0 | | | $be^{+4} + d^{+1} \rightarrow be^{+4}$ |
| 14 | SPUT | Physical sputtering yield | 12 | 1 | NA | -1 | 0 | | | $be^{+4} + h^{+1} \rightarrow be^{+4}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $be^{+4} + he4^{+2} \rightarrow be^{+4}$ |
| 16 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $be^{+4} + kr^{+36} \rightarrow be^{+4}$ |
| 17 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $be^{+4} + n^{+7} \rightarrow be^{+4}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $be^{+4} + ne^{+10} \rightarrow be^{+4}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $be^{+4} + o^{+8} \rightarrow be^{+4}$ |
| 20 | SPUT | Physical sputtering yield | 8 | 1 | NA | -1 | 0 | | | $be^{+4} + t^{+1} \rightarrow be^{+4}$ |
| 21 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $be^{+4} + xe^{+54} \rightarrow be^{+4}$ |
| 22 | REFL | Reflection yield | 20 | 1 | NA | -1 | 0 | | | $be^{+4} + 4he^{+2} \rightarrow 4he^{+2}$ |
| 23 | REFL | Reflection yield | 9 | 1 | NA | -1 | 0 | | | $be^{+4} + be^{+4} \rightarrow be^{+4}$ |
| 24 | REFL | Reflection yield | 18 | 1 | NA | -1 | 0 | | | $be^{+4} + d^{+1} \rightarrow d^{+1}$ |
| 25 | REFL | Reflection yield | 16 | 1 | NA | -1 | 0 | | | $be^{+4} + h^{+1} \rightarrow h^{+1}$ |
| 26 | REFL | Reflection yield | 15 | 1 | NA | -1 | 0 | | | $be^{+4} + t^{+1} \rightarrow t^{+1}$ |

### 7.4.8 Data for B

The data is stored in SHOT=5 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature<br>2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + b^{+5} \rightarrow b^{+5}$ |
| 10 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + d^{+1} \rightarrow b^{+5}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + h^{+1} \rightarrow b^{+5}$ |
| 12 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + he4^{+2} \rightarrow b^{+5}$ |
| 13 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + ne^{+10} \rightarrow b^{+5}$ |
| 14 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + o^{+8} \rightarrow b^{+5}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + t^{+1} \rightarrow b^{+5}$ |
| 16 | REFL | Reflection yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + 4he^{+2} \rightarrow 4he^{+2}$ |
| 17 | REFL | Reflection yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + b^{+5} \rightarrow b^{+5}$ |
| 18 | REFL | Reflection yield | 5 | 1 | NA | -1 | 0 | | | $b^{+5} + d^{+1} \rightarrow d^{+1}$ |
| 19 | REFL | Reflection yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + h^{+1} \rightarrow h^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | REFL | Reflection yield | 1 | 1 | NA | -1 | 0 | | | $b^{+5} + t^{+1} \rightarrow t^{+1}$ |

### 7.4.9 Data for C

The data is stored in SHOT=6 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + ar^{+18} \rightarrow c^{+6}$ |
| 16 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + c^{+6} \rightarrow c^{+6}$ |
| 17 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + d^{+1} \rightarrow c^{+6}$ |
| 18 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + h^{+1} \rightarrow c^{+6}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + he4^{+2} \rightarrow c^{+6}$ |
| 20 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + kr^{+36} \rightarrow c^{+6}$ |
| 21 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + n^{+7} \rightarrow c^{+6}$ |
| 22 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + ne^{+10} \rightarrow c^{+6}$ |
| 23 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + o^{+8} \rightarrow c^{+6}$ |
| 24 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + t^{+1} \rightarrow c^{+6}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + xe^{+54} \rightarrow c^{+6}$ |
| 26 | REFL | Reflection yield | 24 | 1 | NA | -1 | 0 | | | $c^{+6} + 4he^{+2} \rightarrow 4he^{+2}$ |
| 27 | REFL | Reflection yield | 6 | 1 | NA | -1 | 0 | | | $c^{+6} + c^{+6} \rightarrow c^{+6}$ |
| 28 | REFL | Reflection yield | 17 | 1 | NA | -1 | 0 | | | $c^{+6} + d^{+1} \rightarrow d^{+1}$ |
| 29 | REFL | Reflection yield | 14 | 1 | NA | -1 | 0 | | | $c^{+6} + h^{+1} \rightarrow h^{+1}$ |
| 30 | REFL | Reflection yield | 1 | 1 | NA | -1 | 0 | | | $c^{+6} + n^{+7} \rightarrow n^{+7}$ |
| 31 | REFL | Reflection yield | 13 | 1 | NA | -1 | 0 | | | $c^{+6} + t^{+1} \rightarrow t^{+1}$ |

### 7.4.10 Data for N

The data is stored in SHOT=7 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.4.11 Data for O

The data is stored in SHOT=8 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.4.12 Data for F

The data is stored in SHOT=9 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

456

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.4.13 Data for Ne

The data is stored in SHOT=10 RUN=4
Description:

| ['AMNS data created by version 456 of the amns_driver system'] |
|---|

Charge and mass:

| ZN=10<br>AMN=20.1797 |
|---|

Version:

| 456 |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.4.14 Data for Al

The data is stored in SHOT=13 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature<br>2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.4.15 Data for Si

The data is stored in SHOT=14 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.4.16 Data for S

The data is stored in SHOT=16 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.4.17 Data for Cl

The data is stored in SHOT=17 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.4.18 Data for Ar

The data is stored in SHOT=18 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.4.19 Data for Cr

The data is stored in SHOT=24 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.4.20 Data for Fe

The data is stored in SHOT=26 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

#### 7.4.21 Data for Ni

The data is stored in SHOT=28 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.4.22 Data for Cu

The data is stored in SHOT=29 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.4.23 Data for Ge

The data is stored in SHOT=32 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

| |
|---|
| 456 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.4.24 Data for Kr

The data is stored in SHOT=36 RUN=4
Description:

| |
|---|
| ['AMNS data created by version 456 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=36<br>AMN=83.8 |

Version:

| |
|---|
| 456 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.4.25 Data for Mo

The data is stored in SHOT=42 RUN=4
Description:

| |
|---|
| ['AMNS data created by version 456 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=42<br>AMN=95.94 |

Version:

| |
|---|
| 456 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.4.26 Data for Xe

The data is stored in SHOT=54 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.4.27 Data for W

The data is stored in SHOT=74 RUN=4
Description:

['AMNS data created by version 456 of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

456

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 19 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $w^{+74} + ar^{+18} \rightarrow w^{+74}$ |
| 20 | SPUT | Physical sputtering yield | 9 | 1 | NA | -1 | 0 | | | $w^{+74} + d^{+1} \rightarrow w^{+74}$ |
| 21 | SPUT | Physical sputtering yield | 7 | 1 | NA | -1 | 0 | | | $w^{+74} + h^{+1} \rightarrow w^{+74}$ |
| 22 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $w^{+74} + he4^{+2} \rightarrow w^{+74}$ |
| 23 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $w^{+74} + kr^{+36} \rightarrow w^{+74}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $w^{+74} + n^{+7} \rightarrow w^{+74}$ |
| 25 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $w^{+74} + ne^{+10} \rightarrow w^{+74}$ |
| 26 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $w^{+74} + o^{+8} \rightarrow w^{+74}$ |
| 27 | SPUT | Physical sputtering yield | 9 | 1 | NA | -1 | 0 | | | $w^{+74} + t^{+1} \rightarrow w^{+74}$ |
| 28 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $w^{+74} + w^{+74} \rightarrow w^{+74}$ |
| 29 | SPUT | Physical sputtering yield | 1 | 1 | NA | -1 | 0 | | | $w^{+74} + xe^{+54} \rightarrow w^{+74}$ |
| 30 | REFL | Reflection yield | 24 | 1 | NA | -1 | 0 | | | $w^{+74} + 4he^{+2} \rightarrow 4he^{+2}$ |
| 31 | REFL | Reflection yield | 21 | 1 | NA | -1 | 0 | | | $w^{+74} + ar^{+18} \rightarrow ar^{+18}$ |
| 32 | REFL | Reflection yield | 14 | 1 | NA | -1 | 0 | | | $w^{+74} + d^{+1} \rightarrow d^{+1}$ |
| 33 | REFL | Reflection yield | 19 | 1 | NA | -1 | 0 | | | $w^{+74} + h^{+1} \rightarrow h^{+1}$ |
| 34 | REFL | Reflection yield | 1 | 1 | NA | -1 | 0 | | | $w^{+74} + kr^{+36} \rightarrow kr^{+36}$ |
| 35 | REFL | Reflection yield | 18 | 1 | NA | -1 | 0 | | | $w^{+74} + n^{+7} \rightarrow n^{+7}$ |
| 36 | REFL | Reflection yield | 17 | 1 | NA | -1 | 0 | | | $w^{+74} + ne^{+10} \rightarrow ne^{+10}$ |
| 37 | REFL | Reflection yield | 15 | 1 | NA | -1 | 0 | | | $w^{+74} + t^{+1} \rightarrow t^{+1}$ |
| 38 | REFL | Reflection yield | 6 | 1 | NA | -1 | 0 | | | $w^{+74} + w^{+74} \rightarrow w^{+74}$ |
| 39 | REFL | Reflection yield | 2 | 1 | NA | -1 | 0 | | | $w^{+74} + xe^{+54} \rightarrow xe^{+54}$ |

## 7.5 Release 5

Description:

['AMNS data created by version 456M of the amns_driver system']

Date:

2015-07-01 09:03:39.692 +0200

### 7.5.1 Data for H

The data is stored in SHOT=1 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | |

### 7.5.2 Data for 2-H

The data is stored in SHOT=2001 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 7.5.3 Data for 3-H

The data is stored in SHOT=3001 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 7.5.4 Data for He

The data is stored in SHOT=2 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.5.5 Data for 3-He

The data is stored in SHOT=3002 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 7.5.6 Data for Li

The data is stored in SHOT=3 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

| |
|---|
| 456M |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.5.7 Data for Be

The data is stored in SHOT=4 RUN=5
Description:

| |
|---|
| ['AMNS data created by version 456M of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=4<br>AMN=9.012182 |

Version:

| |
|---|
| 456M |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.5.8 Data for B

The data is stored in SHOT=5 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 7.5.9 Data for C

The data is stored in SHOT=6 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H|D|T^{+0} \rightarrow C^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + C → C |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + D → C |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + H → C |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + He4 → C |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + Kr → C |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + N → C |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + Ne → C |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + O → C |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + T → C |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | C + Xe → C |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + He → He |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + C → C |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + D → D |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + H → H |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + N → N |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | C + T → T |

### 7.5.10 Data for N

The data is stored in SHOT=7 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.5.11 Data for O

The data is stored in SHOT=8 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.5.12 Data for F

The data is stored in SHOT=9 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.5.13 Data for Ne

The data is stored in SHOT=10 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.5.14 Data for Al

The data is stored in SHOT=13 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.5.15 Data for Si

The data is stored in SHOT=14 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.5.16 Data for S

The data is stored in SHOT=16 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.5.17 Data for Cl

The data is stored in SHOT=17 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.5.18 Data for Ar

The data is stored in SHOT=18 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.5.19 Data for Cr

The data is stored in SHOT=24 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.5.20 Data for Fe

The data is stored in SHOT=26 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.5.21 Data for Ni

The data is stored in SHOT=28 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.5.22 Data for Cu

The data is stored in SHOT=29 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.5.23 Data for Ge

The data is stored in SHOT=32 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.5.24 Data for Kr

The data is stored in SHOT=36 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.5.25 Data for Mo

The data is stored in SHOT=42 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.5.26 Data for Xe

The data is stored in SHOT=54 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.5.27 Data for W

The data is stored in SHOT=74 RUN=5
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=74
AMN=183.84

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.6 Release 6

Description:

['AMNS data created by version 456M of the amns_driver system']

Date:

2015-07-01 11:10:41.030 +0200

### 7.6.1 Data for H

The data is stored in SHOT=1 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.6.2 Data for 2-H

The data is stored in SHOT=2001 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 7.6.3 Data for 3-H

The data is stored in SHOT=3001 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 7.6.4 Data for He

The data is stored in SHOT=2 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.6.5 Data for 3-He

The data is stored in SHOT=3002 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 7.6.6 Data for Li

The data is stored in SHOT=3 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.6.7 Data for Be

The data is stored in SHOT=4 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.6.8 Data for B

The data is stored in SHOT=5 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + H → B |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + He4 → B |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + Ne → B |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + O → B |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + T → B |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + He → He |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + B → B |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + D → D |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + H → H |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + T → T |

### 7.6.9 Data for C

The data is stored in SHOT=6 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.6.10 Data for N

The data is stored in SHOT=7 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

### 7.6.11 Data for O

The data is stored in SHOT=8 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | |

### 7.6.12 Data for F

The data is stored in SHOT=9 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.6.13 Data for Ne

The data is stored in SHOT=10 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.6.14 Data for Al

The data is stored in SHOT=13 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.6.15 Data for Si

The data is stored in SHOT=14 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

| |
|---|
| 456M |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.6.16 Data for S

The data is stored in SHOT=16 RUN=6
Description:

| |
|---|
| ['AMNS data created by version 456M of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=16<br>AMN=32.066 |

Version:

| |
|---|
| 456M |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.6.17 Data for Cl

The data is stored in SHOT=17 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.6.18 Data for Ar

The data is stored in SHOT=18 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.6.19 Data for Cr

The data is stored in SHOT=24 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.6.20 Data for Fe

The data is stored in SHOT=26 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.6.21 Data for Ni

The data is stored in SHOT=28 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.6.22 Data for Cu

The data is stored in SHOT=29 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.6.23 Data for Ge

The data is stored in SHOT=32 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.6.24 Data for Kr

The data is stored in SHOT=36 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.6.25 Data for Mo

The data is stored in SHOT=42 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

456M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.6.26 Data for Xe

The data is stored in SHOT=54 RUN=6
Description:

['AMNS data created by version 456M of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

456M

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.6.27 Data for W

The data is stored in SHOT=74 RUN=6
Description:

| ['AMNS data created by version 456M of the amns_driver system'] |
|---|

Charge and mass:

| ZN=74<br>AMN=183.84 |
|---|

Version:

| 456M |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.7 Release 7

Description:

['AMNS data created by version 458M of the amns_driver system']

Date:

2015-07-01 18:02:08.145 +0200

### 7.7.1 Data for H

The data is stored in SHOT=1 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.7.2 Data for 2-H

The data is stored in SHOT=2001 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 7.7.3 Data for 3-H

The data is stored in SHOT=3001 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 7.7.4 Data for He

The data is stored in SHOT=2 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.7.5 Data for 3-He

The data is stored in SHOT=3002 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 7.7.6 Data for Li

The data is stored in SHOT=3 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.7.7 Data for Be

The data is stored in SHOT=4 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.7.8 Data for B

The data is stored in SHOT=5 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 7.7.9 Data for C

The data is stored in SHOT=6 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.7.10 Data for N

The data is stored in SHOT=7 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.7.11 Data for O

The data is stored in SHOT=8 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.7.12 Data for F

The data is stored in SHOT=9 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.7.13 Data for Ne

The data is stored in SHOT=10 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.7.14 Data for Al

The data is stored in SHOT=13 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.7.15 Data for Si

The data is stored in SHOT=14 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

| 458M |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.7.16 Data for S

The data is stored in SHOT=16 RUN=7
Description:

| ['AMNS data created by version 458M of the amns_driver system'] |
|---|

Charge and mass:

| ZN=16<br>AMN=32.066 |
|---|

Version:

| 458M |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.7.17 Data for Cl

The data is stored in SHOT=17 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.7.18 Data for Ar

The data is stored in SHOT=18 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.7.19 Data for Cr

The data is stored in SHOT=24 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.7.20 Data for Fe

The data is stored in SHOT=26 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.7.21 Data for Ni

The data is stored in SHOT=28 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.7.22 Data for Cu

The data is stored in SHOT=29 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.7.23 Data for Ge

The data is stored in SHOT=32 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.7.24 Data for Kr

The data is stored in SHOT=36 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.7.25 Data for Mo

The data is stored in SHOT=42 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.7.26 Data for Xe

The data is stored in SHOT=54 RUN=7
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

458M

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | |

### 7.7.27 Data for W

The data is stored in SHOT=74 RUN=7
Description:

| |
|---|
| ['AMNS data created by version 458M of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=74<br>AMN=183.84 |

Version:

| |
|---|
| 458M |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.8 Release 8

Description:

['AMNS data created by version 458M of the amns_driver system']

Date:

2015-07-01 18:54:23.526 +0200

### 7.8.1 Data for H

The data is stored in SHOT=1 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.8.2 Data for 2-H

The data is stored in SHOT=2001 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow T + H$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow He + n$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow T + H$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow He + n$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow T + H$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow He + n$ |

### 7.8.3 Data for 3-H

The data is stored in SHOT=3001 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $T + D \rightarrow He + n$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $T + D \rightarrow He + n$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow He + n$ |

### 7.8.4 Data for He

The data is stored in SHOT=2 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{z+0} + He^{+0} \rightarrow He^{z-1} + He^{+1}$ |

### 7.8.5 Data for 3-He

The data is stored in SHOT=3002 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $He + D \rightarrow He + H$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $He + D \rightarrow He + H$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow He + H$ |

### 7.8.6 Data for Li

The data is stored in SHOT=3 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.8.7 Data for Be

The data is stored in SHOT=4 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.8.8 Data for B

The data is stored in SHOT=5 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 7.8.9 Data for C

The data is stored in SHOT=6 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.8.10 Data for N

The data is stored in SHOT=7 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.8.11 Data for O

The data is stored in SHOT=8 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.8.12 Data for F

The data is stored in SHOT=9 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.8.13 Data for Ne

The data is stored in SHOT=10 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{z+0} + Ne^{+0} \rightarrow Ne^{z-1} + Ne^{+1}$ |

### 7.8.14 Data for Al

The data is stored in SHOT=13 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.8.15 Data for Si

The data is stored in SHOT=14 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.8.16 Data for S

The data is stored in SHOT=16 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.8.17 Data for Cl

The data is stored in SHOT=17 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.8.18 Data for Ar

The data is stored in SHOT=18 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{z+0} + Ar^{+0} \rightarrow Ar^{z-1} + Ar^{+1}$ |

### 7.8.19 Data for Cr

The data is stored in SHOT=24 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.8.20 Data for Fe

The data is stored in SHOT=26 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.8.21 Data for Ni

The data is stored in SHOT=28 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.8.22 Data for Cu

The data is stored in SHOT=29 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.8.23 Data for Ge

The data is stored in SHOT=32 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.8.24 Data for Kr

The data is stored in SHOT=36 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{z+0} + Kr^{+0} \rightarrow Kr^{z-1} + Kr^{+1}$ |

### 7.8.25 Data for Mo

The data is stored in SHOT=42 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.8.26 Data for Xe

The data is stored in SHOT=54 RUN=8
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

458M

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{z+0} + Xe^{+0} \rightarrow Xe^{z-1} + Xe^{+1}$ |

### 7.8.27 Data for W

The data is stored in SHOT=74 RUN=8
Description:

| ['AMNS data created by version 458M of the amns_driver system'] |
|---|

Charge and mass:

| ZN=74<br>AMN=183.84 |
|---|

Version:

| 458M |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.9 Release 9

Description:

['AMNS data created by version 458M of the amns_driver system']

Date:

2015-07-02 09:53:35.000 +0200

### 7.9.1 Data for H

The data is stored in SHOT=1 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.9.2 Data for 2-H

The data is stored in SHOT=2001 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.9.3 Data for 3-H

The data is stored in SHOT=3001 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

### 7.9.4 Data for He

The data is stored in SHOT=2 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.9.5 Data for 3-He

The data is stored in SHOT=3002 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.9.6 Data for Li

The data is stored in SHOT=3 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.9.7 Data for Be

The data is stored in SHOT=4 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.9.8 Data for B

The data is stored in SHOT=5 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 7.9.9 Data for C

The data is stored in SHOT=6 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.9.10 Data for N

The data is stored in SHOT=7 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.9.11 Data for O

The data is stored in SHOT=8 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.9.12 Data for F

The data is stored in SHOT=9 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.9.13 Data for Ne

The data is stored in SHOT=10 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.9.14 Data for Al

The data is stored in SHOT=13 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.9.15 Data for Si

The data is stored in SHOT=14 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.9.16 Data for S

The data is stored in SHOT=16 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.9.17 Data for Cl

The data is stored in SHOT=17 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.9.18 Data for Ar

The data is stored in SHOT=18 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.9.19 Data for Cr

The data is stored in SHOT=24 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.9.20 Data for Fe

The data is stored in SHOT=26 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.9.21 Data for Ni

The data is stored in SHOT=28 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.9.22 Data for Cu

The data is stored in SHOT=29 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.9.23 Data for Ge

The data is stored in SHOT=32 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.9.24 Data for Kr

The data is stored in SHOT=36 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.9.25 Data for Mo

The data is stored in SHOT=42 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.9.26 Data for Xe

The data is stored in SHOT=54 RUN=9
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

458M

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.9.27 Data for W

The data is stored in SHOT=74 RUN=9
Description:

| ['AMNS data created by version 458M of the amns_driver system'] |
|---|

Charge and mass:

| ZN=74<br>AMN=183.84 |
|---|

Version:

| 458M |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.10 Release 10

Description:

['AMNS data created by version 458M of the amns_driver system']

Date:

2015-07-02 10:59:17.469 +0200

### 7.10.1 Data for H

The data is stored in SHOT=1 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.10.2 Data for 2-H

The data is stored in SHOT=2001 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(D,p)T | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | D(D,n)^3He | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | tt D(D,p)T | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | tt D(D,n)^3He | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | bt D(D,p)T | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | bt D(D,n)^3He | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.10.3 Data for 3-H

The data is stored in SHOT=3001 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(T,n)^4He | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | tt D(T,n)^4He | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | bt D(T,n)^4He | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | bt T(D,n)^4He | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

### 7.10.4 Data for He

The data is stored in SHOT=2 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.10.5 Data for 3-He

The data is stored in SHOT=3002 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D(^3He,p)^4He | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | tt D(^3He,p)^4He | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | bt ^3He(D,p)^4He | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | bt D(^3He,p)^4He | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.10.6 Data for Li

The data is stored in SHOT=3 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.10.7 Data for Be

The data is stored in SHOT=4 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.10.8 Data for B

The data is stored in SHOT=5 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + H → B |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + He4 → B |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + Ne → B |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + O → B |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + T → B |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + He → He |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + B → B |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + D → D |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + H → H |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + T → T |

### 7.10.9 Data for C

The data is stored in SHOT=6 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.10.10 Data for N

The data is stored in SHOT=7 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.10.11 Data for O

The data is stored in SHOT=8 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.10.12 Data for F

The data is stored in SHOT=9 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.10.13 Data for Ne

The data is stored in SHOT=10 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.10.14 Data for Al

The data is stored in SHOT=13 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.10.15 Data for Si

The data is stored in SHOT=14 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.10.16 Data for S

The data is stored in SHOT=16 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

458M

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.10.17 Data for Cl

The data is stored in SHOT=17 RUN=10
Description:

| ['AMNS data created by version 458M of the amns_driver system'] |
|---|

Charge and mass:

| ZN=17<br>AMN=35.4527 |
|---|

Version:

| 458M |
|---|

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

#### 7.10.18 Data for Ar

The data is stored in SHOT=18 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.10.19 Data for Cr

The data is stored in SHOT=24 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.10.20 Data for Fe

The data is stored in SHOT=26 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.10.21 Data for Ni

The data is stored in SHOT=28 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.10.22 Data for Cu

The data is stored in SHOT=29 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.10.23 Data for Ge

The data is stored in SHOT=32 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.10.24 Data for Kr

The data is stored in SHOT=36 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.10.25 Data for Mo

The data is stored in SHOT=42 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

#### 7.10.26 Data for Xe

The data is stored in SHOT=54 RUN=10
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

458M

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.10.27 Data for W

The data is stored in SHOT=74 RUN=10
Description:

| |
|---|
| ['AMNS data created by version 458M of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=74<br>AMN=183.84 |

Version:

| |
|---|
| 458M |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.11 Release 11

Description:

['AMNS data created by version 458M of the amns_driver system']

Date:

2015-07-02 11:12:38.071 +0200

### 7.11.1 Data for H

The data is stored in SHOT=1 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.11.2 Data for 2-H

The data is stored in SHOT=2001 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.11.3 Data for 3-H

The data is stored in SHOT=3001 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | NUC_TT | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

### 7.11.4 Data for He

The data is stored in SHOT=2 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.11.5 Data for 3-He

The data is stored in SHOT=3002 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.11.6 Data for Li

The data is stored in SHOT=3 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.11.7 Data for Be

The data is stored in SHOT=4 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.11.8 Data for B

The data is stored in SHOT=5 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + H → B |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + He4 → B |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + Ne → B |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + O → B |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + T → B |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + He → He |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + B → B |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + D → D |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + H → H |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + T → T |

### 7.11.9 Data for C

The data is stored in SHOT=6 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.11.10 Data for N

The data is stored in SHOT=7 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.11.11 Data for O

The data is stored in SHOT=8 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.11.12 Data for F

The data is stored in SHOT=9 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.11.13 Data for Ne

The data is stored in SHOT=10 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.11.14 Data for Al

The data is stored in SHOT=13 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.11.15 Data for Si

The data is stored in SHOT=14 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.11.16 Data for S

The data is stored in SHOT=16 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.11.17 Data for Cl

The data is stored in SHOT=17 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

#### 7.11.18 Data for Ar

The data is stored in SHOT=18 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.11.19 Data for Cr

The data is stored in SHOT=24 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.11.20 Data for Fe

The data is stored in SHOT=26 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.11.21 Data for Ni

The data is stored in SHOT=28 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.11.22 Data for Cu

The data is stored in SHOT=29 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.11.23 Data for Ge

The data is stored in SHOT=32 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.11.24 Data for Kr

The data is stored in SHOT=36 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.11.25 Data for Mo

The data is stored in SHOT=42 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

458M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.11.26 Data for Xe

The data is stored in SHOT=54 RUN=11
Description:

['AMNS data created by version 458M of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

458M

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.11.27 Data for W

The data is stored in SHOT=74 RUN=11
Description:

| |
|---|
| ['AMNS data created by version 458M of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=74<br>AMN=183.84 |

Version:

| |
|---|
| 458M |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.12 Release 12

Description:

['AMNS data created by version 459 of the amns_driver system']

Date:

2015-07-02 13:44:23.912 +0200

### 7.12.1 Data for H

The data is stored in SHOT=1 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.12.2 Data for 2-H

The data is stored in SHOT=2001 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.12.3 Data for 3-H

The data is stored in SHOT=3001 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | NUC_TT | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

### 7.12.4 Data for He

The data is stored in SHOT=2 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.12.5 Data for 3-He

The data is stored in SHOT=3002 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.12.6 Data for Li

The data is stored in SHOT=3 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.12.7 Data for Be

The data is stored in SHOT=4 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.12.8 Data for B

The data is stored in SHOT=5 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 7.12.9 Data for C

The data is stored in SHOT=6 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.12.10 Data for N

The data is stored in SHOT=7 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.12.11 Data for O

The data is stored in SHOT=8 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.12.12 Data for F

The data is stored in SHOT=9 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.12.13 Data for Ne

The data is stored in SHOT=10 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.12.14 Data for Al

The data is stored in SHOT=13 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.12.15 Data for Si

The data is stored in SHOT=14 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

| |
|---|
| 459 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.12.16 Data for S

The data is stored in SHOT=16 RUN=12
Description:

| |
|---|
| ['AMNS data created by version 459 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=16<br>AMN=32.066 |

Version:

| |
|---|
| 459 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.12.17 Data for Cl

The data is stored in SHOT=17 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.12.18 Data for Ar

The data is stored in SHOT=18 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.12.19 Data for Cr

The data is stored in SHOT=24 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.12.20 Data for Fe

The data is stored in SHOT=26 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.12.21 Data for Ni

The data is stored in SHOT=28 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.12.22 Data for Cu

The data is stored in SHOT=29 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.12.23 Data for Ge

The data is stored in SHOT=32 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.12.24 Data for Kr

The data is stored in SHOT=36 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.12.25 Data for Mo

The data is stored in SHOT=42 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

459

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

#### 7.12.26 Data for Xe

The data is stored in SHOT=54 RUN=12
Description:

['AMNS data created by version 459 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

459

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.12.27 Data for W

The data is stored in SHOT=74 RUN=12
Description:

| |
|---|
| ['AMNS data created by version 459 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=74<br>AMN=183.84 |

Version:

| |
|---|
| 459 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.13 Release 13

Description:

['AMNS data created by version 467 of the amns_driver system']

Date:

2015-07-20 17:49:50.587 +0200

### 7.13.1 Data for H

The data is stored in SHOT=1 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.13.2 Data for 2-H

The data is stored in SHOT=2001 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | cross section for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | cross section for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.13.3 Data for 3-H

The data is stored in SHOT=3001 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | NUC_TT | cross section for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

### 7.13.4 Data for He

The data is stored in SHOT=2 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.13.5 Data for 3-He

The data is stored in SHOT=3002 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | cross section for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.13.6 Data for Li

The data is stored in SHOT=3 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.13.7 Data for Be

The data is stored in SHOT=4 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.13.8 Data for B

The data is stored in SHOT=5 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + H → B |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + He4 → B |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + Ne → B |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + O → B |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + T → B |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + He → He |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + B → B |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + D → D |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + H → H |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + T → T |

### 7.13.9 Data for C

The data is stored in SHOT=6 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.13.10 Data for N

The data is stored in SHOT=7 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.13.11 Data for O

The data is stored in SHOT=8 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.13.12 Data for F

The data is stored in SHOT=9 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.13.13 Data for Ne

The data is stored in SHOT=10 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.13.14 Data for Al

The data is stored in SHOT=13 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.13.15 Data for Si

The data is stored in SHOT=14 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

| |
|---|
| 467 |

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

#### 7.13.16 Data for S

The data is stored in SHOT=16 RUN=13
Description:

| |
|---|
| ['AMNS data created by version 467 of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=16<br>AMN=32.066 |

Version:

| |
|---|
| 467 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.13.17 Data for Cl

The data is stored in SHOT=17 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.13.18 Data for Ar

The data is stored in SHOT=18 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.13.19 Data for Cr

The data is stored in SHOT=24 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.13.20 Data for Fe

The data is stored in SHOT=26 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.13.21 Data for Ni

The data is stored in SHOT=28 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.13.22 Data for Cu

The data is stored in SHOT=29 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.13.23 Data for Ge

The data is stored in SHOT=32 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.13.24 Data for Kr

The data is stored in SHOT=36 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.13.25 Data for Mo

The data is stored in SHOT=42 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

467

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.13.26 Data for Xe

The data is stored in SHOT=54 RUN=13
Description:

['AMNS data created by version 467 of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

467

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.13.27 Data for W

The data is stored in SHOT=74 RUN=13
Description:

| ['AMNS data created by version 467 of the amns_driver system'] |
|---|

Charge and mass:

| ZN=74<br>AMN=183.84 |
|---|

Version:

| 467 |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.14 Release 14

Description:

['AMNS data created by version 4.10b of the amns_driver system']

Date:

2017-11-22 11:31:42.530 +0100

### 7.14.1 Data for H

The data is stored in SHOT=1 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.14.2 Data for 4674

The data is stored in SHOT=4674 RUN=1
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=-999999999
AMN=-9e+40

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $D^{+1} + Be^{+4} + C^{+6} + W^{+74} \rightarrow D^{+1} + Be^{+4} + C^{+6}$ |
| 2 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $Be^{+4} + Be^{+4} + C^{+6} + W^{+74} \rightarrow Be^{+4} + Be^{+4} + C^{+6}$ |
| 3 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $C^{+6} + Be^{+4} + C^{+6} + W^{+74} \rightarrow C^{+6} + Be^{+4} + C^{+6}$ |
| 4 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $W^{+74} + Be^{+4} + C^{+6} + W^{+74} \rightarrow W^{+74} + Be^{+4} + C^{+}$ |

### 7.14.3 Data for 2-H

The data is stored in SHOT=2001 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | reactivity for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | reactivity for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.14.4 Data for 3-H

The data is stored in SHOT=3001 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |
| 2 | NUC_TT | reactivity for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

### 7.14.5 Data for He

The data is stored in SHOT=2 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.14.6 Data for 3-He

The data is stored in SHOT=3002 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | reactivity for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.14.7 Data for Li

The data is stored in SHOT=3 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.14.8 Data for Be

The data is stored in SHOT=4 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature<br>2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature<br>2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature<br>2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat<br>K. Schmid<br>Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.14.9 Data for B

The data is stored in SHOT=5 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 7.14.10 Data for C

The data is stored in SHOT=6 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.14.11 Data for N

The data is stored in SHOT=7 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.14.12 Data for O

The data is stored in SHOT=8 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.14.13 Data for F

The data is stored in SHOT=9 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.14.14 Data for Ne

The data is stored in SHOT=10 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.14.15 Data for Al

The data is stored in SHOT=13 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

#### 7.14.16 Data for Si

The data is stored in SHOT=14 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

#### 7.14.17 Data for S

The data is stored in SHOT=16 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.14.18 Data for Cl

The data is stored in SHOT=17 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.14.19 Data for Ar

The data is stored in SHOT=18 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.14.20 Data for Cr

The data is stored in SHOT=24 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H|D|T^{+0} \rightarrow Cr^{z-1} + H|D|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.14.21 Data for Fe

The data is stored in SHOT=26 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.14.22 Data for Ni

The data is stored in SHOT=28 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.14.23 Data for Cu

The data is stored in SHOT=29 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.14.24 Data for Ge

The data is stored in SHOT=32 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.14.25 Data for Kr

The data is stored in SHOT=36 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.14.26 Data for Mo

The data is stored in SHOT=42 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

595

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.14.27 Data for Xe

The data is stored in SHOT=54 RUN=14
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

595

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.14.28 Data for W

The data is stored in SHOT=74 RUN=14
Description:

| ['AMNS data created by version 4.10b of the amns_driver system'] |
|---|

Charge and mass:

| ZN=74<br>AMN=183.84 |
|---|

Version:

| 595 |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.15 Release 15

Description:

['AMNS data created by version 4.10b of the amns_driver system']

Date:

2018-05-03 22:29:43.441 +0200

### 7.15.1 Data for H

The data is stored in SHOT=1 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.15.2 Data for 4674

The data is stored in SHOT=4674 RUN=2
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=-999999999
AMN=-9e+40

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $D^{+1} + Be^{+4} + C^{+6} + W^{+74} \rightarrow D^{+1} + Be^{+4} + C^{+6}$ |
| 2 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $Be^{+4} + Be^{+4} + C^{+6} + W^{+74} \rightarrow Be^{+4} + Be^{+4} + C^{+6}$ |
| 3 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $C^{+6} + Be^{+4} + C^{+6} + W^{+74} \rightarrow C^{+6} + Be^{+4} + C^{+6}$ |
| 4 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $W^{+74} + Be^{+4} + C^{+6} + W^{+74} \rightarrow W^{+74} + Be^{+4} + C^{+}$ |

### 7.15.3 Data for 2-H

The data is stored in SHOT=2001 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | reactivity for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | reactivity for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.15.4 Data for 3-H

The data is stored in SHOT=3001 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |
| 2 | NUC_TT | reactivity for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | NUC_BB | cross section for T(T,2n)^4He | 1 | 1 | m^{2} | -1 | 1006 | | | $T + T \rightarrow 2n + He$ |
| 6 | NUC_TT | reactivity for tt T(T,2n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow 2n + He$ |

### 7.15.5 Data for He

The data is stored in SHOT=2 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.15.6 Data for 3-He

The data is stored in SHOT=3002 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | reactivity for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.15.7 Data for Li

The data is stored in SHOT=3 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.15.8 Data for Be

The data is stored in SHOT=4 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.15.9 Data for B

The data is stored in SHOT=5 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 7.15.10 Data for C

The data is stored in SHOT=6 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.15.11 Data for N

The data is stored in SHOT=7 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.15.12 Data for O

The data is stored in SHOT=8 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.15.13 Data for F

The data is stored in SHOT=9 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.15.14 Data for Ne

The data is stored in SHOT=10 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.15.15 Data for Al

The data is stored in SHOT=13 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.15.16 Data for Si

The data is stored in SHOT=14 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.15.17 Data for S

The data is stored in SHOT=16 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.15.18 Data for Cl

The data is stored in SHOT=17 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

#### 7.15.19 Data for Ar

The data is stored in SHOT=18 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.15.20 Data for Cr

The data is stored in SHOT=24 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.15.21 Data for Fe

The data is stored in SHOT=26 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.15.22 Data for Ni

The data is stored in SHOT=28 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.15.23 Data for Cu

The data is stored in SHOT=29 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.15.24 Data for Ge

The data is stored in SHOT=32 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.15.25 Data for Kr

The data is stored in SHOT=36 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.15.26 Data for Mo

The data is stored in SHOT=42 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.15.27 Data for Xe

The data is stored in SHOT=54 RUN=15
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

612M

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.15.28 Data for W

The data is stored in SHOT=74 RUN=15
Description:

| ['AMNS data created by version 4.10b of the amns_driver system'] |
|---|

Charge and mass:

| ZN=74<br>AMN=183.84 |
|---|

Version:

| 612M |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.16 Release 16

Description:

['AMNS data created by version 4.10b of the amns_driver system']

Date:

2018-05-03 23:03:04.655 +0200

### 7.16.1 Data for H

The data is stored in SHOT=1 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.16.2 Data for 4674

The data is stored in SHOT=4674 RUN=3
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=-999999999
AMN=-9e+40

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $D^{+1} + Be^{+4} + C^{+6} + W^{+74} \rightarrow D^{+1} + Be^{+4} + C^{+6}$ |
| 2 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $Be^{+4} + Be^{+4} + C^{+6} + W^{+74} \rightarrow Be^{+4} + Be^{+4} + C^{+6}$ |
| 3 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $C^{+6} + Be^{+4} + C^{+6} + W^{+74} \rightarrow C^{+6} + Be^{+4} + C^{+6}$ |
| 4 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $W^{+74} + Be^{+4} + C^{+6} + W^{+74} \rightarrow W^{+74} + Be^{+4} + C^{+}$ |

### 7.16.3 Data for 2-H

The data is stored in SHOT=2001 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | reactivity for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | reactivity for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.16.4 Data for 3-H

The data is stored in SHOT=3001 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |
| 2 | NUC_TT | reactivity for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | NUC_BB | cross section for T(T,2n)^4He | 1 | 1 | m^{2} | -1 | 1006 | | | $T + T \rightarrow 2n + He$ |
| 6 | NUC_TT | reactivity for tt T(T,2n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow 2n + He$ |

### 7.16.5 Data for He

The data is stored in SHOT=2 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.16.6 Data for 3-He

The data is stored in SHOT=3002 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | reactivity for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.16.7 Data for Li

The data is stored in SHOT=3 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.16.8 Data for Be

The data is stored in SHOT=4 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.16.9 Data for B

The data is stored in SHOT=5 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + H → B |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + He4 → B |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + Ne → B |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + O → B |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + T → B |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + He → He |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + B → B |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + D → D |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + H → H |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + T → T |

### 7.16.10 Data for C

The data is stored in SHOT=6 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.16.11 Data for N

The data is stored in SHOT=7 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.16.12 Data for O

The data is stored in SHOT=8 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.16.13 Data for F

The data is stored in SHOT=9 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.16.14 Data for Ne

The data is stored in SHOT=10 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.16.15 Data for Al

The data is stored in SHOT=13 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.16.16 Data for Si

The data is stored in SHOT=14 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.16.17 Data for S

The data is stored in SHOT=16 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.16.18 Data for Cl

The data is stored in SHOT=17 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

#### 7.16.19 Data for Ar

The data is stored in SHOT=18 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.16.20 Data for Cr

The data is stored in SHOT=24 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.16.21 Data for Fe

The data is stored in SHOT=26 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.16.22 Data for Ni

The data is stored in SHOT=28 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.16.23 Data for Cu

The data is stored in SHOT=29 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.16.24 Data for Ge

The data is stored in SHOT=32 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.16.25 Data for Kr

The data is stored in SHOT=36 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.16.26 Data for Mo

The data is stored in SHOT=42 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

612M

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.16.27 Data for Xe

The data is stored in SHOT=54 RUN=16
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

612M

Data source:

| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |
|---|

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.16.28 Data for W

The data is stored in SHOT=74 RUN=16
Description:

| ['AMNS data created by version 4.10b of the amns_driver system'] |
|---|

Charge and mass:

| ZN=74<br>AMN=183.84 |
|---|

Version:

| 612M |
|---|

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IN | DPROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.17 Release 17

Description:

['AMNS data created by version 4.10b of the amns_driver system']

Date:

2018-05-03 23:23:47.891 +0200

### 7.17.1 Data for H

The data is stored in SHOT=1 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.17.2 Data for 4674

The data is stored in SHOT=4674 RUN=4
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=-999999999
AMN=-9e+40

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $D^{+1} + Be^{+4} + C^{+6} + W^{+74} \rightarrow D^{+1} + Be^{+4} + C^{+6}$ |
| 2 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $Be^{+4} + Be^{+4} + C^{+6} + W^{+74} \rightarrow Be^{+4} + Be^{+4} + C^{+6}$ |
| 3 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $C^{+6} + Be^{+4} + C^{+6} + W^{+74} \rightarrow C^{+6} + Be^{+4} + C^{+6}$ |
| 4 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $W^{+74} + Be^{+4} + C^{+6} + W^{+74} \rightarrow W^{+74} + Be^{+4} + C^{+}$ |

### 7.17.3 Data for 2-H

The data is stored in SHOT=2001 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | reactivity for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | reactivity for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.17.4 Data for 3-H

The data is stored in SHOT=3001 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |
| 2 | NUC_TT | reactivity for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | NUC_BB | cross section for T(T,2n)^4He | 1 | 1 | m^{2} | -1 | 1006 | | | $T + T \rightarrow 2n + He$ |
| 6 | NUC_TT | reactivity for tt T(T,2n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow 2n + He$ |

### 7.17.5 Data for He

The data is stored in SHOT=2 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature<br>2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.17.6 Data for 3-He

The data is stored in SHOT=3002 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | reactivity for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.17.7 Data for Li

The data is stored in SHOT=3 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.17.8 Data for Be

The data is stored in SHOT=4 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.17.9 Data for B

The data is stored in SHOT=5 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + H \rightarrow B$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + He4 \rightarrow B$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + Ne \rightarrow B$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + O \rightarrow B$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + T \rightarrow B$ |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + He \rightarrow He$ |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + B \rightarrow B$ |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + D \rightarrow D$ |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + H \rightarrow H$ |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $B + T \rightarrow T$ |

### 7.17.10 Data for C

The data is stored in SHOT=6 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.17.11 Data for N

The data is stored in SHOT=7 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.17.12 Data for O

The data is stored in SHOT=8 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.17.13 Data for F

The data is stored in SHOT=9 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.17.14 Data for Ne

The data is stored in SHOT=10 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.17.15 Data for Al

The data is stored in SHOT=13 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.17.16 Data for Si

The data is stored in SHOT=14 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.17.17 Data for S

The data is stored in SHOT=16 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.17.18 Data for Cl

The data is stored in SHOT=17 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.17.19 Data for Ar

The data is stored in SHOT=18 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.17.20 Data for Cr

The data is stored in SHOT=24 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.17.21 Data for Fe

The data is stored in SHOT=26 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.17.22 Data for Ni

The data is stored in SHOT=28 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.17.23 Data for Cu

The data is stored in SHOT=29 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.17.24 Data for Ge

The data is stored in SHOT=32 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.17.25 Data for Kr

The data is stored in SHOT=36 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.17.26 Data for Mo

The data is stored in SHOT=42 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

624

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.17.27 Data for Xe

The data is stored in SHOT=54 RUN=17
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

624

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.17.28 Data for W

The data is stored in SHOT=74 RUN=17
Description:

| |
|---|
| ['AMNS data created by version 4.10b of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=74<br>AMN=183.84 |

Version:

| |
|---|
| 624 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

## 7.18 Release 18 [DEFAULT]

Description:

['AMNS data created by version 4.10b of the amns_driver system']

Date:

2018-05-24 17:51:30.423 +0200

### 7.18.1 Data for H

The data is stored in SHOT=1 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=1.00794

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd12/ acd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + 2e^{-1} \rightarrow H^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd12/ scd12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + e^{-1} \rightarrow H^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 2 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} + H\|D\|T^{+0} \rightarrow H^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb12/ prb12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 5 | LR | Line radiation | 2 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt12/ plt12_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 6 | ZE | Effective Charge | 2 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 2 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 2 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_h.dat | 1: Electron Temperature 2: Electron Density | $H^{z+0} \rightarrow H^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-total-elastic-cross-section.res | 1: Energy | $H^{+0} \rightarrow H^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 1-H/ H-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $H^{+0} \rightarrow H^{+0}$ |

### 7.18.2 Data for 4674

The data is stored in SHOT=4674 RUN=5
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=-999999999
AMN=-9e+40

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $D^{+1} + Be^{+4} + C^{+6} + W^{+74} \rightarrow D^{+1} + Be^{+4} + C^{+6}$ |
| 2 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $Be^{+4} + Be^{+4} + C^{+6} + W^{+74} \rightarrow Be^{+4} + Be^{+4} + C^{+6}$ |
| 3 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $C^{+6} + Be^{+4} + C^{+6} + W^{+74} \rightarrow C^{+6} + Be^{+4} + C^{+6}$ |
| 4 | MIXSPUT MIXREFL | MIXED MATERIAL PHYSICAL SPUTTERING AND REFLECTOION YIELDS RYIELD | 5 | 2 | YIELD RYIELD | -1 | 0 | | | $W^{+74} + Be^{+4} + C^{+6} + W^{+74} \rightarrow W^{+74} + Be^{+4} + C^{+}$ |

### 7.18.3 Data for 2-H

The data is stored in SHOT=2001 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=2.0

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(D,p)T | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow H + T$ |
| 2 | NUC_BB | cross section for D(D,n)^3He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + D \rightarrow n + He$ |
| 3 | NUC_TT | reactivity for tt D(D,p)T | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow H + T$ |
| 4 | NUC_TT | reactivity for tt D(D,n)^3He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + D \rightarrow n + He$ |
| 5 | NUC_BT | Reaction rate for bt D(D,p)T | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow H + T$ |
| 6 | NUC_BT | Reaction rate for bt D(D,n)^3He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + D \rightarrow n + He$ |

### 7.18.4 Data for 3-H

The data is stored in SHOT=3001 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=1
AMN=3.0

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(T,n)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + T \rightarrow n + He$ |
| 2 | NUC_TT | reactivity for tt D(T,n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow n + He$ |
| 3 | NUC_BT | Reaction rate for bt D(T,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + T \rightarrow n + He$ |
| 4 | NUC_BT | Reaction rate for bt T(D,n)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $T + D \rightarrow n + He$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | NUC_BB | cross section for T(T,2n)^4He | 1 | 1 | m^{2} | -1 | 1006 | | | $T + T \rightarrow 2n + He$ |
| 6 | NUC_TT | reactivity for tt T(T,2n)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + T \rightarrow 2n + He$ |

### 7.18.5 Data for He

The data is stored in SHOT=2 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=4.002602

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + 2e^{-1} \rightarrow He^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + e^{-1} \rightarrow He^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 3 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} + H\|D\|T^{+0} \rightarrow He^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 5 | LR | Line radiation | 3 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 6 | ZE | Effective Charge | 3 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 3 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 3 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_he.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_250.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 3 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_he.jet_350.dat | 1: Electron Temperature 2: Electron Density | $He^{z+0} \rightarrow He^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-total-elastic-cross-section.res | 1: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 2-He/ He-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $He^{+0} \rightarrow He^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $He^{+1} + He^{+0} \rightarrow He^{+0} + He^{+1}$ |

### 7.18.6 Data for 3-He

The data is stored in SHOT=3002 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=2
AMN=3.0

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NUC_BB | cross section for D(^3He,p)^4He | 1 | 1 | m^{2} | -1 | 1001 | | | $D + He \rightarrow H + He$ |
| 2 | NUC_TT | reactivity for tt D(^3He,p)^4He | 1 | 1 | m^{3} s^{-1} | -1 | 1002 | | | $D + He \rightarrow H + He$ |
| 3 | NUC_BT | Reaction rate for bt ^3He(D,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $He + D \rightarrow H + He$ |
| 4 | NUC_BT | Reaction rate for bt D(^3He,p)^4He | 1 | 2 | m^{3} s^{-1} | 1 | 1 | | 1: Temperature x kB<br>2: Particle energy | $D + He \rightarrow H + He$ |

### 7.18.7 Data for Li

The data is stored in SHOT=3 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=3
AMN=6.941

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + 2e^{-1} \rightarrow Li^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 4 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + e^{-1} \rightarrow Li^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 4 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} + H\|D\|T^{+0} \rightarrow Li^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_li.dat | 1: Electron Temperature<br>2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 4 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 6 | ZE | Effective Charge | 4 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 4 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 4 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_li.dat | 1: Electron Temperature 2: Electron Density | $Li^{z+0} \rightarrow Li^{z+0}$ |

### 7.18.8 Data for Be

The data is stored in SHOT=4 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=4
AMN=9.012182

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + 2e^{-1} \rightarrow Be^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 5 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + e^{-1} \rightarrow Be^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 5 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} + H\|D\|T^{+0} \rightarrow Be^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 5 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 6 | ZE | Effective Charge | 5 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 5 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 5 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_be.dat | 1: Electron Temperature 2: Electron Density | $Be^{z+0} \rightarrow Be^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-total-elastic-cross-section.res | 1: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 4-Be/ Be-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Be^{+0} \rightarrow Be^{+0}$ |
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ar \rightarrow Be$ |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Be \rightarrow Be$ |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + D \rightarrow Be$ |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + H \rightarrow Be$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + He4 \rightarrow Be$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Kr \rightarrow Be$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + N \rightarrow Be$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Ne \rightarrow Be$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + O \rightarrow Be$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + T \rightarrow Be$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_be.dat K. Schmid Some book by Eckstein, still working on that | | $Be + Xe \rightarrow Be$ |
| 22 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + He \rightarrow He$ |
| 23 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + Be \rightarrow Be$ |
| 24 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + D \rightarrow D$ |
| 25 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + H \rightarrow H$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_be.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $Be + T \rightarrow T$ |

### 7.18.9 Data for B

The data is stored in SHOT=5 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=5
AMN=10.811

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + 2e^{-1} \rightarrow B^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + e^{-1} \rightarrow B^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 6 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} + H\|D\|T^{+0} \rightarrow B^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 5 | LR | Line radiation | 6 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 6 | ZE | Effective Charge | 6 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 6 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 6 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_b.dat | 1: Electron Temperature 2: Electron Density | $B^{z+0} \rightarrow B^{z+0}$ |
| 9 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + B \rightarrow B$ |
| 10 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | $B + D \rightarrow B$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + H → B |
| 12 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + He4 → B |
| 13 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + Ne → B |
| 14 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + O → B |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_b.dat K. Schmid Some book by Eckstein, still working on that | | B + T → B |
| 16 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + He → He |
| 17 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + B → B |
| 18 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + D → D |
| 19 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + H → H |
| 20 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_b.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | B + T → T |

### 7.18.10 Data for C

The data is stored in SHOT=6 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=6
AMN=12.011

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + 2e^{-1} \rightarrow C^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + e^{-1} \rightarrow C^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 7 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd96/ ccd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} + H\|D\|T^{+0} \rightarrow C^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 5 | LR | Line radiation | 7 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 6 | ZE | Effective Charge | 7 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 7 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 7 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_c.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_250.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 7 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_c.jet_350.dat | 1: Electron Temperature 2: Electron Density | $C^{z+0} \rightarrow C^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-total-elastic-cross-section.res | 1: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 6-C/ C-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $C^{+0} \rightarrow C^{+0}$ |
| 15 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ar \rightarrow C$ |
| 16 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + C \rightarrow C$ |
| 17 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + D \rightarrow C$ |
| 18 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + H \rightarrow C$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + He4 \rightarrow C$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Kr \rightarrow C$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + N \rightarrow C$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Ne \rightarrow C$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + O \rightarrow C$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + T \rightarrow C$ |
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_c.dat K. Schmid Some book by Eckstein, still working on that | | $C + Xe \rightarrow C$ |
| 26 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + He \rightarrow He$ |
| 27 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + C \rightarrow C$ |
| 28 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + D \rightarrow D$ |
| 29 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + H \rightarrow H$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + N \rightarrow N$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_c.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $C + T \rightarrow T$ |

### 7.18.11 Data for N

The data is stored in SHOT=7 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=7
AMN=14.00674

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + 2e^{-1} \rightarrow N^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 8 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + e^{-1} \rightarrow N^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 8 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} + H\|D\|T^{+0} \rightarrow N^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 5 | LR | Line radiation | 8 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 6 | ZE | Effective Charge | 8 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 8 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 8 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_n.dat | 1: Electron Temperature 2: Electron Density | $N^{z+0} \rightarrow N^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-total-elastic-cross-section.res | 1: Energy | $N^{+0} \rightarrow N^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 7-N/ N-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $N^{+0} \rightarrow N^{+0}$ |

### 7.18.12 Data for O

The data is stored in SHOT=8 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=8
AMN=15.9994

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + 2e^{-1} \rightarrow O^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 9 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + e^{-1} \rightarrow O^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 9 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} + H\|D\|T^{+0} \rightarrow O^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 5 | LR | Line radiation | 9 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 6 | ZE | Effective Charge | 9 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 9 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_o.dat | 1: Electron Temperature 2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 9 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_o.dat | 1: Electron Temperature<br>2: Electron Density | $O^{z+0} \rightarrow O^{z+0}$ |
| 9 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 9 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-total-elastic-cross-section.res | 1: Energy | $O^{+0} \rightarrow O^{+0}$ |
| 10 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 10 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 8-O/ O-angular-diff-elastic-cross-section.res | 1: Angle<br>2: Energy | $O^{+0} \rightarrow O^{+0}$ |

### 7.18.13 Data for F

The data is stored in SHOT=9 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=9
AMN=18.9984032

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + 2e^{-1} \rightarrow F^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + e^{-1} \rightarrow F^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 10 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} + H\|D\|T^{+0} \rightarrow F^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_f.dat | 1: Electron Temperature<br>2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 10 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 6 | ZE | Effective Charge | 10 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 10 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 10 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_f.dat | 1: Electron Temperature 2: Electron Density | $F^{z+0} \rightarrow F^{z+0}$ |

### 7.18.14 Data for Ne

The data is stored in SHOT=10 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=10
AMN=20.1797

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd96/ acd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + 2e^{-1} \rightarrow Ne^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 11 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd96/ scd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + e^{-1} \rightarrow Ne^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 11 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} + H\|D\|T^{+0} \rightarrow Ne^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb96/ prb96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | LR | Line radiation | 11 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt96/ plt96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 6 | ZE | Effective Charge | 11 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd96/ zcd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 11 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd96/ ycd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 11 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd96/ ecd96_ne.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 11 | 2 | W m^{3} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ne.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ne^{z+0} \rightarrow Ne^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-total-elastic-cross-section.res | 1: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 10-Ne/ Ne-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ne^{+0} \rightarrow Ne^{+0}$ |
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ne^{+1} + Ne^{+0} \rightarrow Ne^{+0} + Ne^{+1}$ |

### 7.18.15 Data for Al

The data is stored in SHOT=13 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=13
AMN=26.981539

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + 2e^{-1} \rightarrow Al^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + e^{-1} \rightarrow Al^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 14 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} + H\|D\|T^{+0} \rightarrow Al^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 5 | LR | Line radiation | 14 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 6 | ZE | Effective Charge | 14 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 14 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 14 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_al.dat | 1: Electron Temperature 2: Electron Density | $Al^{z+0} \rightarrow Al^{z+0}$ |

### 7.18.16 Data for Si

The data is stored in SHOT=14 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=14
AMN=28.0855

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + 2e^{-1} \rightarrow Si^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + e^{-1} \rightarrow Si^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 15 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} + H\|D\|T^{+0} \rightarrow Si^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 5 | LR | Line radiation | 15 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 6 | ZE | Effective Charge | 15 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 15 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 15 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_si.dat | 1: Electron Temperature 2: Electron Density | $Si^{z+0} \rightarrow Si^{z+0}$ |

### 7.18.17 Data for S

The data is stored in SHOT=16 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=16
AMN=32.066

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + 2e^{-1} \rightarrow S^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + e^{-1} \rightarrow S^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 17 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} + H\|D\|T^{+0} \rightarrow S^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 5 | LR | Line radiation | 17 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 6 | ZE | Effective Charge | 17 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 17 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 17 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_s.dat | 1: Electron Temperature 2: Electron Density | $S^{z+0} \rightarrow S^{z+0}$ |

### 7.18.18 Data for Cl

The data is stored in SHOT=17 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=17
AMN=35.4527

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + 2e^{-1} \rightarrow Cl^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + e^{-1} \rightarrow Cl^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 18 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} + H\|D\|T^{+0} \rightarrow Cl^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 5 | LR | Line radiation | 18 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 6 | ZE | Effective Charge | 18 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 18 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 18 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cl.dat | 1: Electron Temperature 2: Electron Density | $Cl^{z+0} \rightarrow Cl^{z+0}$ |

### 7.18.19 Data for Ar

The data is stored in SHOT=18 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=18
AMN=39.948

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + 2e^{-1} \rightarrow Ar^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + e^{-1} \rightarrow Ar^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 19 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} + H\|D\|T^{+0} \rightarrow Ar^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 5 | LR | Line radiation | 19 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 6 | ZE | Effective Charge | 19 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 19 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 19 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ar.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 19 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ar.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ar^{z+0} \rightarrow Ar^{z+0}$ |
| 13 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 13 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-total-elastic-cross-section.res | 1: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |
| 14 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 14 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 18-Ar/ Ar-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $Ar^{+0} \rightarrow Ar^{+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Ar^{+1} + Ar^{+0} \rightarrow Ar^{+0} + Ar^{+1}$ |

### 7.18.20 Data for Cr

The data is stored in SHOT=24 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=24
AMN=51.9961

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + 2e^{-1} \rightarrow Cr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + e^{-1} \rightarrow Cr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 25 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} + H\|D\|T^{+0} \rightarrow Cr^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 5 | LR | Line radiation | 25 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 6 | ZE | Effective Charge | 25 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 25 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cr.dat | 1: Electron Temperature<br>2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 25 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cr.dat | 1: Electron Temperature 2: Electron Density | $Cr^{z+0} \rightarrow Cr^{z+0}$ |

### 7.18.21 Data for Fe

The data is stored in SHOT=26 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=26
AMN=55.847

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + 2e^{-1} \rightarrow Fe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + e^{-1} \rightarrow Fe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 27 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} + H\|D\|T^{+0} \rightarrow Fe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 5 | LR | Line radiation | 27 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 6 | ZE | Effective Charge | 27 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 27 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 27 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_fe.dat | 1: Electron Temperature 2: Electron Density | $Fe^{z+0} \rightarrow Fe^{z+0}$ |

### 7.18.22 Data for Ni

The data is stored in SHOT=28 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=28
AMN=58.6934

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + 2e^{-1} \rightarrow Ni^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + e^{-1} \rightarrow Ni^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 29 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} + H\|D\|T^{+0} \rightarrow Ni^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 5 | LR | Line radiation | 29 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 6 | ZE | Effective Charge | 29 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 29 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | EIP | Effective Ionisation Potential | 29 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ni.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 29 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_ni.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Ni^{z+0} \rightarrow Ni^{z+0}$ |

### 7.18.23 Data for Cu

The data is stored in SHOT=29 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=29
AMN=63.546

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + 2e^{-1} \rightarrow Cu^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + e^{-1} \rightarrow Cu^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 30 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} + H\|D\|T^{+0} \rightarrow Cu^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 5 | LR | Line radiation | 30 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 6 | ZE | Effective Charge | 30 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 30 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 30 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_cu.dat | 1: Electron Temperature 2: Electron Density | $Cu^{z+0} \rightarrow Cu^{z+0}$ |

### 7.18.24 Data for Ge

The data is stored in SHOT=32 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=32
AMN=72.61

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + 2e^{-1} \rightarrow Ge^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + e^{-1} \rightarrow Ge^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 33 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} + H\|D\|T^{+0} \rightarrow Ge^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 5 | LR | Line radiation | 33 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 6 | ZE | Effective Charge | 33 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 33 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 33 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_ge.dat | 1: Electron Temperature 2: Electron Density | $Ge^{z+0} \rightarrow Ge^{z+0}$ |

### 7.18.25 Data for Kr

The data is stored in SHOT=36 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=36
AMN=83.8

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + 2e^{-1} \rightarrow Kr^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + e^{-1} \rightarrow Kr^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 37 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} + H\|D\|T^{+0} \rightarrow Kr^{z-1} + H\|D\|T^{+1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | BR | Recomb/brems power coeffts | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 5 | LR | Line radiation | 37 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 6 | ZE | Effective Charge | 37 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 37 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 37 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_kr.dat | 1: Electron Temperature 2: Electron Density | $Kr^{z+0} \rightarrow Kr^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Kr^{+1} + Kr^{+0} \rightarrow Kr^{+0} + Kr^{+1}$ |

### 7.18.26 Data for Mo

The data is stored in SHOT=42 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=42
AMN=95.94

Version:

643

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + 2e^{-1} \rightarrow Mo^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + e^{-1} \rightarrow Mo^{z+1} + 2e^{-1}$ |

| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CX | CX recombination coeffts | 43 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} + H\|D\|T^{+0} \rightarrow Mo^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 5 | LR | Line radiation | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 6 | ZE | Effective Charge | 43 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 43 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 43 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_mo.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 9 | LR_250 | Line radiation (250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 10 | LR_350 | Line radiation (350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 11 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_250.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |
| 12 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 43 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_mo.jet_350.dat | 1: Electron Temperature 2: Electron Density | $Mo^{z+0} \rightarrow Mo^{z+0}$ |

### 7.18.27 Data for Xe

The data is stored in SHOT=54 RUN=18
Description:

['AMNS data created by version 4.10b of the amns_driver system']

Charge and mass:

ZN=54
AMN=131.29

Version:

643

Data source:

| |
|---|
| Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling |

| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + 2e^{-1} \rightarrow Xe^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + e^{-1} \rightarrow Xe^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 55 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} + H\|D\|T^{+0} \rightarrow Xe^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 5 | LR | Line radiation | 55 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 6 | ZE | Effective Charge | 55 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 55 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 55 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_xe.dat | 1: Electron Temperature 2: Electron Density | $Xe^{z+0} \rightarrow Xe^{z+0}$ |
| 9 | RCT | Resonant Charge Transfer | 1 | 1 | m^{2} | -1 | 1003 | http:/ / epsppd.epfl.ch/ Warsaw/ pdf/ P2_115.pdf<br><br>http://epsppd.epfl.ch/Warsaw/pdf/P2_115.pdf | | $Xe^{+1} + Xe^{+0} \rightarrow Xe^{+0} + Xe^{+1}$ |

### 7.18.28 Data for W

The data is stored in SHOT=74 RUN=18
Description:

| |
|---|
| ['AMNS data created by version 4.10b of the amns_driver system'] |

Charge and mass:

| |
|---|
| ZN=74<br>AMN=183.84 |

Version:

| |
|---|
| 643 |

Data source:

Contributors to the AMNS task of the EFDA Task Force on Integerated Tokamak Modelling

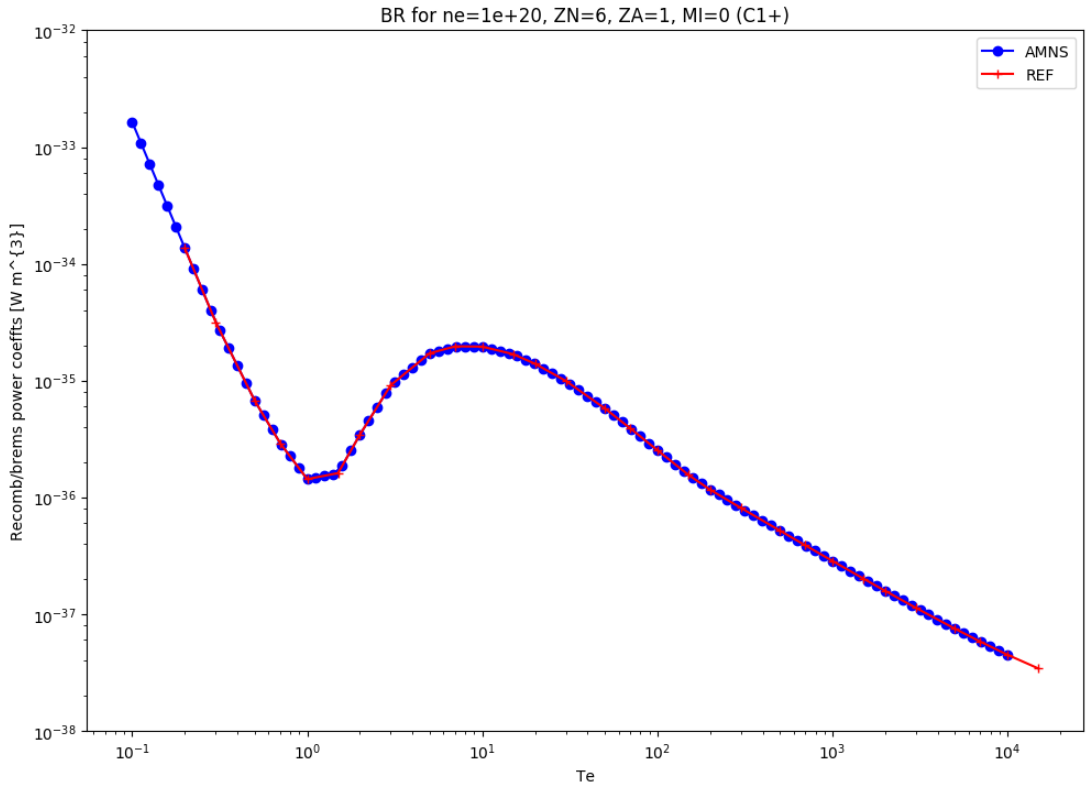
| IND | PROC | LABEL | NO. | NDI | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RC | Recombination | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd89/ acd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 2 | EI | Electron Impact Ionisation | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd89/ scd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 3 | CX | CX recombination coeffts | 75 | 2 | m^{3} s^{-1} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ ccd89/ ccd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + H\|D\|T^{+0} \rightarrow W^{z-1} + H\|D\|T^{+1}$ |
| 4 | BR | Recomb/brems power coeffts | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb89/ prb89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 5 | LR | Line radiation | 75 | 2 | W m^{3} | 1 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt89/ plt89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 6 | ZE | Effective Charge | 75 | 2 | e | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ zcd89/ zcd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 7 | ZE2 | Effective Square Charge | 75 | 2 | e^{2} | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ycd89/ ycd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 8 | EIP | Effective Ionisation Potential | 75 | 2 | eV | 1 | 0 | ../ ../ ../ data/ atomic/ adas/ adf11/ ecd89/ ecd89_w_01.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 9 | RC_TP | Recombination (Puetterich) | 75 | 2 | m^{3} s^{-1} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ acd50/ acd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + 2e^{-1} \rightarrow W^{z-1} + e^{-1}$ |
| 10 | EI_TP | Electron Impact Ionisation (Puetterich) | 75 | 2 | m^{3} s^{-1} | 3 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ scd50/ scd50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} + e^{-1} \rightarrow W^{z+1} + 2e^{-1}$ |
| 11 | BR_TP | Recomb/brems power coeffts (Puetterich) | 75 | 2 | W m^{3} | 2 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb50/ prb50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 12 | LR_TP | Line radiation (Puetterich) | 75 | 2 | W m^{3} | 4 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt50/ plt50_w.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 13 | LR_250 | Line radiation (250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |

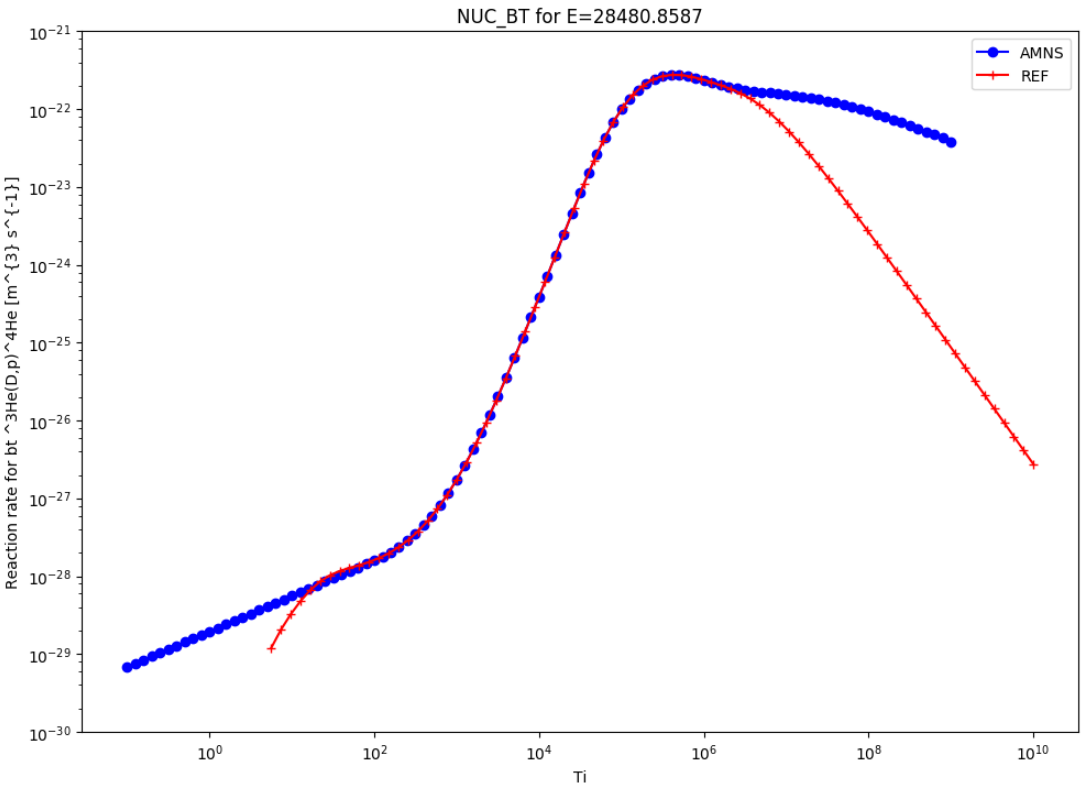
| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | LR_350 | Line radiation (350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ plt88/ plt88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 15 | BR_250 | Recomb/brems power coeffts (JET 250u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_250.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 16 | BR_350 | Recomb/brems power coeffts (JET 350u Be filter) | 75 | 2 | W m^{3} | 5 | 1 | ../ ../ ../ data/ atomic/ adas/ adf11/ prb88/ prb88_w.jet_350.dat | 1: Electron Temperature 2: Electron Density | $W^{z+0} \rightarrow W^{z+0}$ |
| 17 | EL | Total Elastic Cross-Section | 1 | 1 | m^{2} | 17 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-total-elastic-cross-section.res | 1: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 18 | dEL | Differential Elastic Cross-Section | 1 | 2 | m^{2} sr^{-1} | 18 | 1 | ../ ../ ../ data/ atomic/ cross_section/ Elastic_CS_Tokesi/ 74-W/ W-angular-diff-elastic-cross-section.res | 1: Angle 2: Energy | $W^{+0} \rightarrow W^{+0}$ |
| 19 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ar \rightarrow W$ |
| 20 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + D \rightarrow W$ |
| 21 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + H \rightarrow W$ |
| 22 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + He4 \rightarrow W$ |
| 23 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Kr \rightarrow W$ |
| 24 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + N \rightarrow W$ |

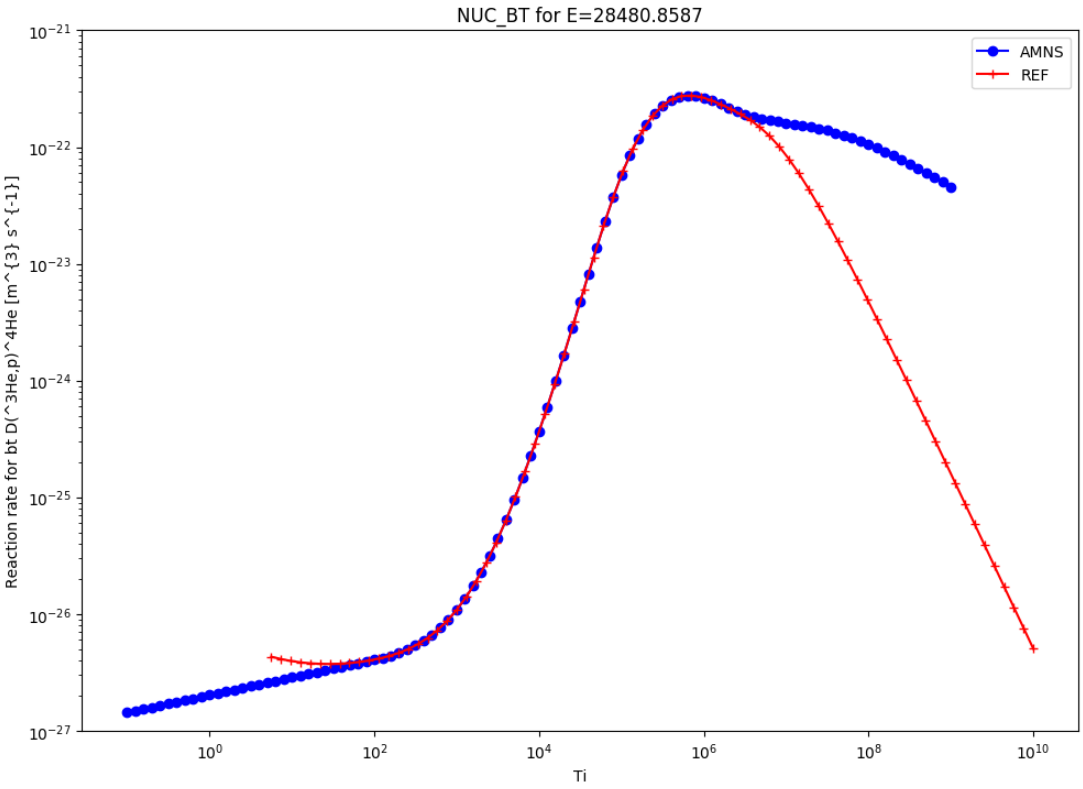
| IND | PROC | LABEL | NO. | NDI | MUNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Ne \rightarrow W$ |
| 26 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + O \rightarrow W$ |
| 27 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + T \rightarrow W$ |
| 28 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + W \rightarrow W$ |
| 29 | SPUT | Physical sputtering yield | 1 | 2 | NA | -1 | 1004 | ../ ../ ../ data/ surface/ block_syield_w.dat K. Schmid Some book by Eckstein, still working on that | | $W + Xe \rightarrow W$ |
| 30 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + He \rightarrow He$ |
| 31 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ar \rightarrow Ar$ |
| 32 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + D \rightarrow D$ |
| 33 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + H \rightarrow H$ |
| 34 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Kr \rightarrow Kr$ |
| 35 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + N \rightarrow N$ |

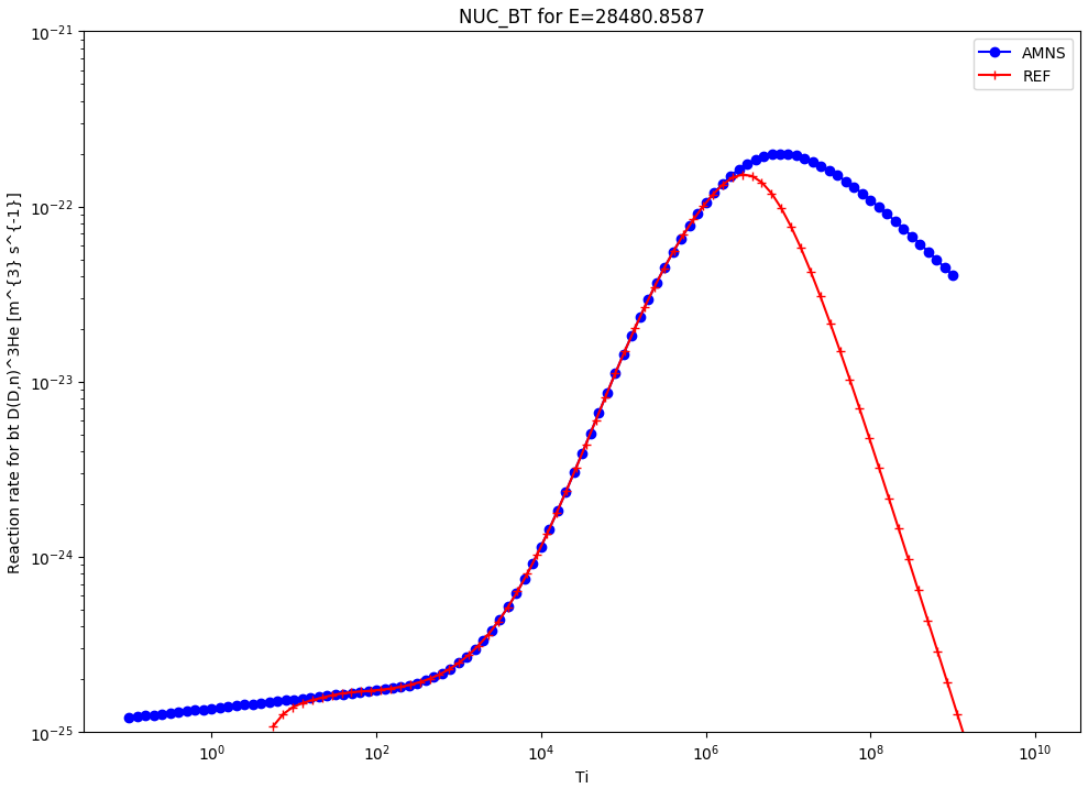
| IND | PROC | LABEL | NO. | NDIM | UNITS | COORD | INTERP FUN | SOURCE PROVIDER CITATION | COORD LABELS | REACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Ne \rightarrow Ne$ |
| 37 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + T \rightarrow T$ |
| 38 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + W \rightarrow W$ |
| 39 | REFL | Reflection yield | 1 | 2 | NA | -1 | 1005 | ../ ../ ../ data/ surface/ block_ryield_w.dat K. Schmid IPP-Report: W. Eckstein Reflection (Backscattering) IPP 17/12 August, 2009 | | $W + Xe \rightarrow Xe$ |

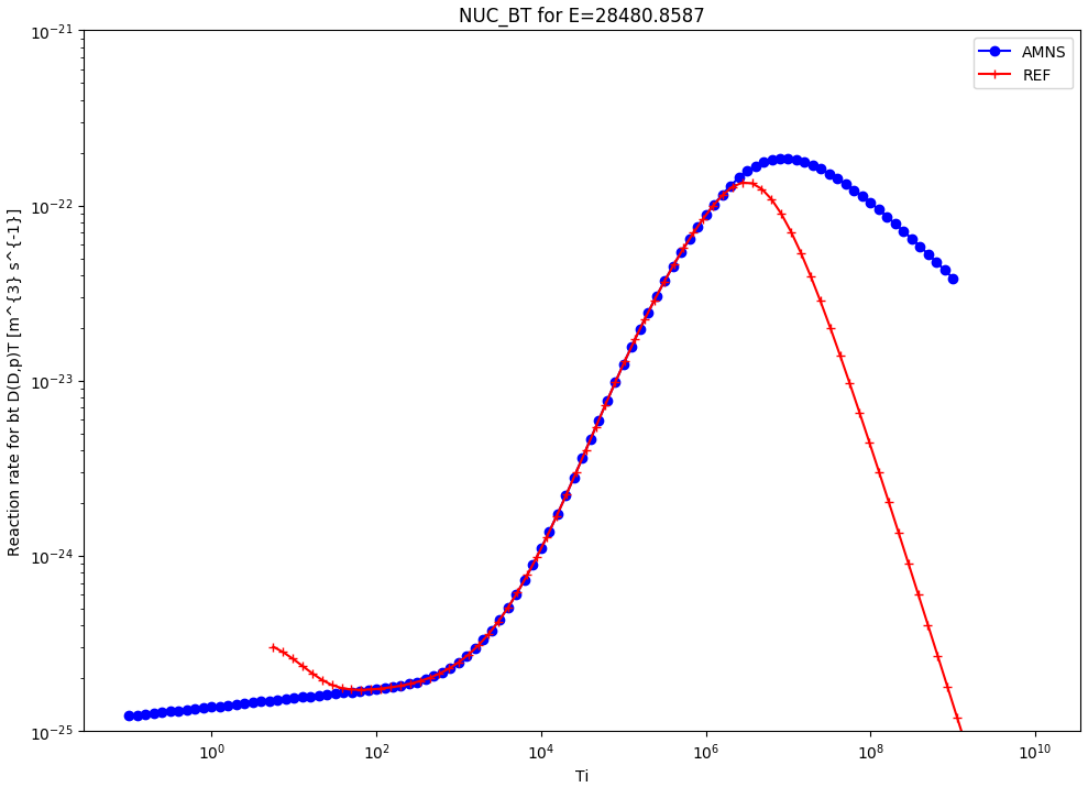
# 8 AMNS Verification Plots

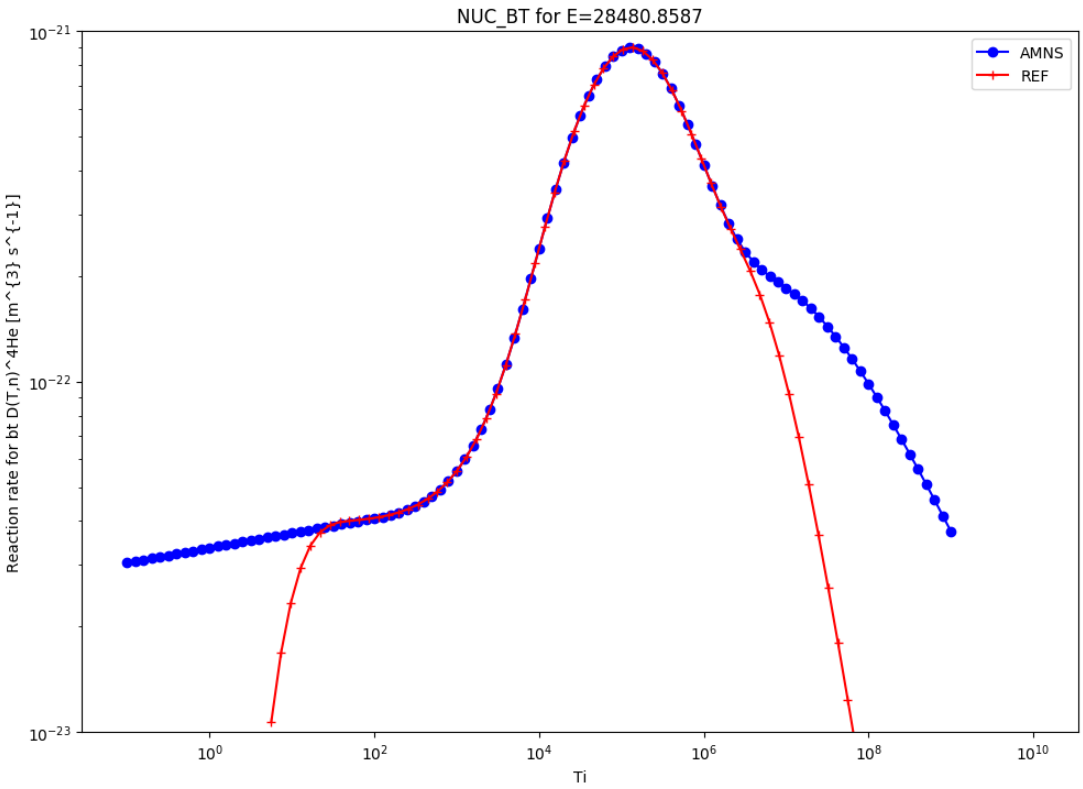


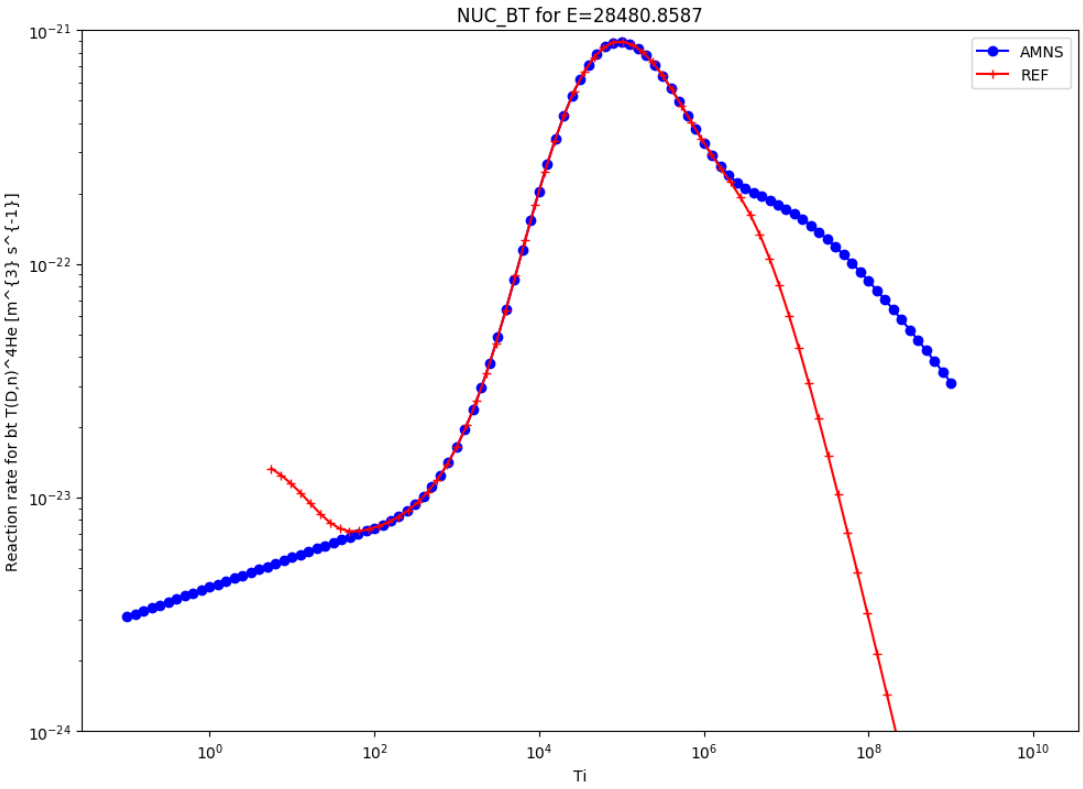

NUC_BT for E=28480.8587
AMNS
REF
Reaction rate for bt ^3He(D,p)^4He [m^{3} s^{-1}]
Ti

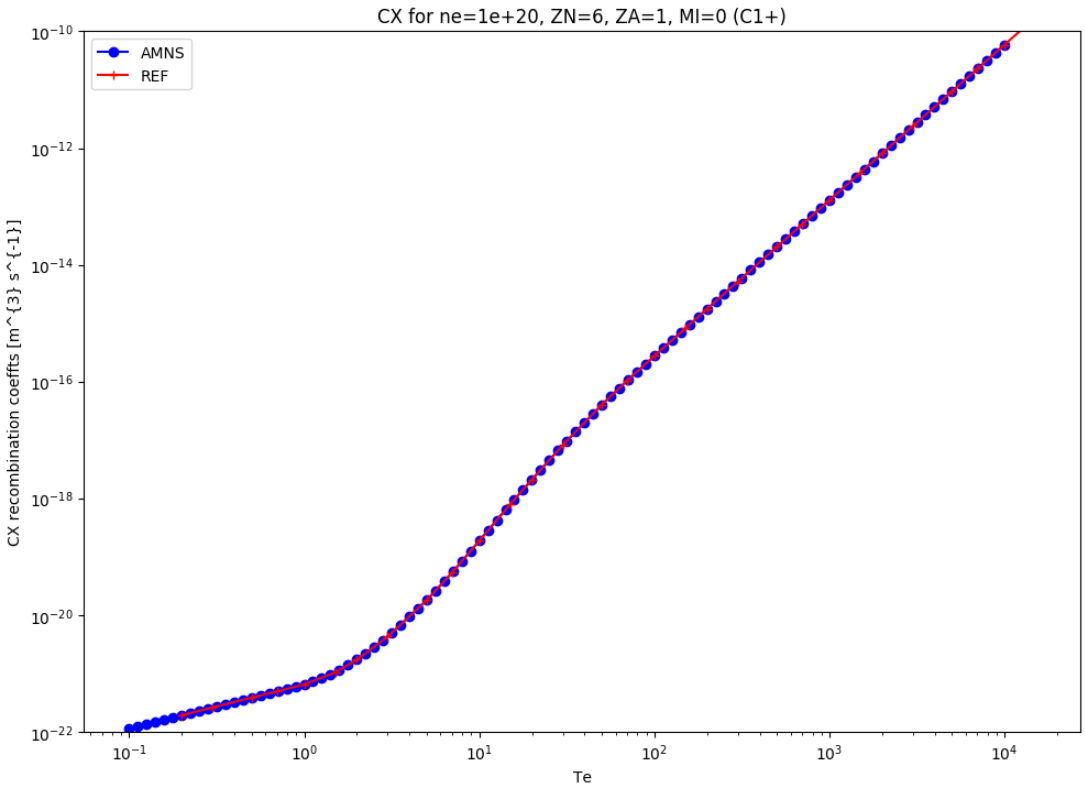

NUC_BT for E=28480.8587
AMNS
REF
Reaction rate for bt D(^3He,p)^4He [m^{3} s^{-1}]
Ti

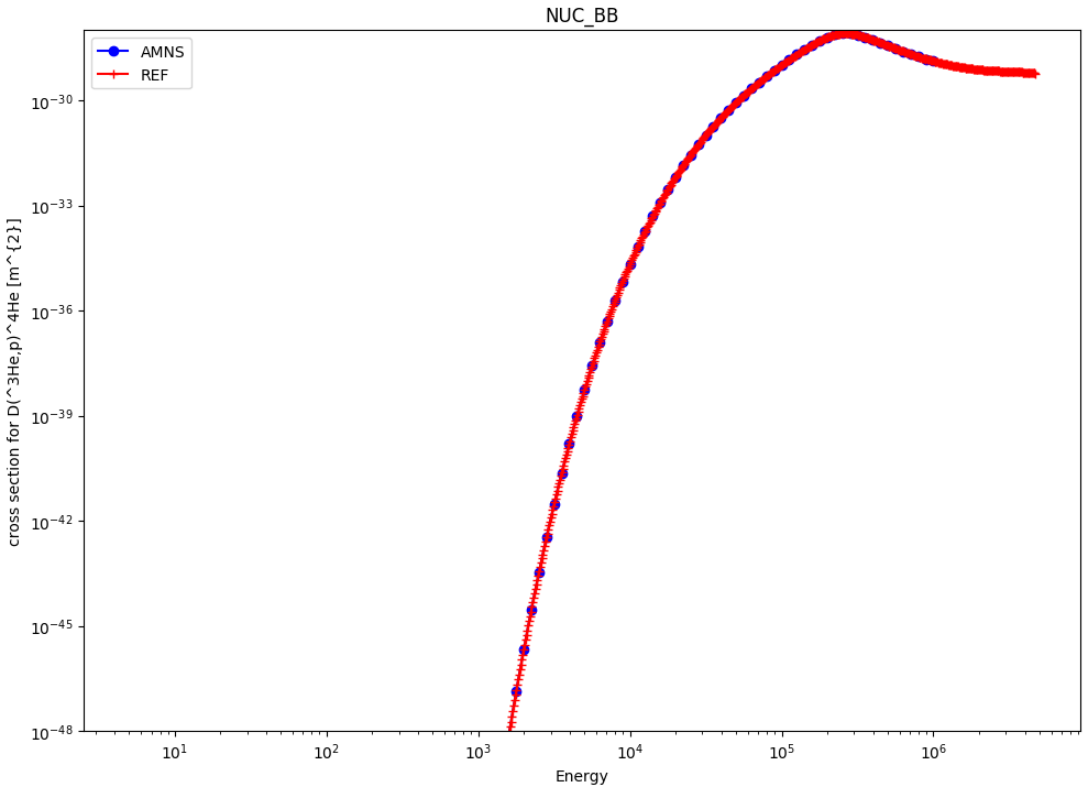

NUC_BT for E=28480.8587
AMNS
REF
Reaction rate for bt D(D,n)^3He [m^{3} s^{-1}]
Ti

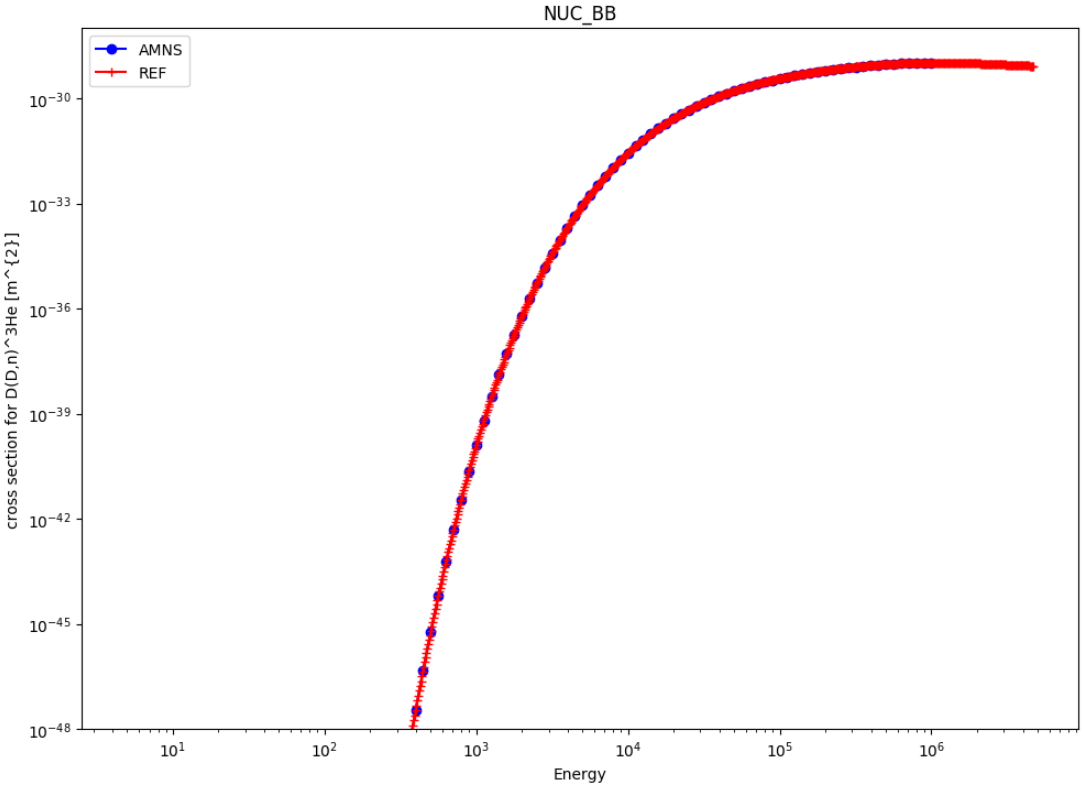

NUC_BT for E=28480.8587
AMNS
REF
Reaction rate for bt D(D,p)T [m^{3} s^{-1}]
Ti

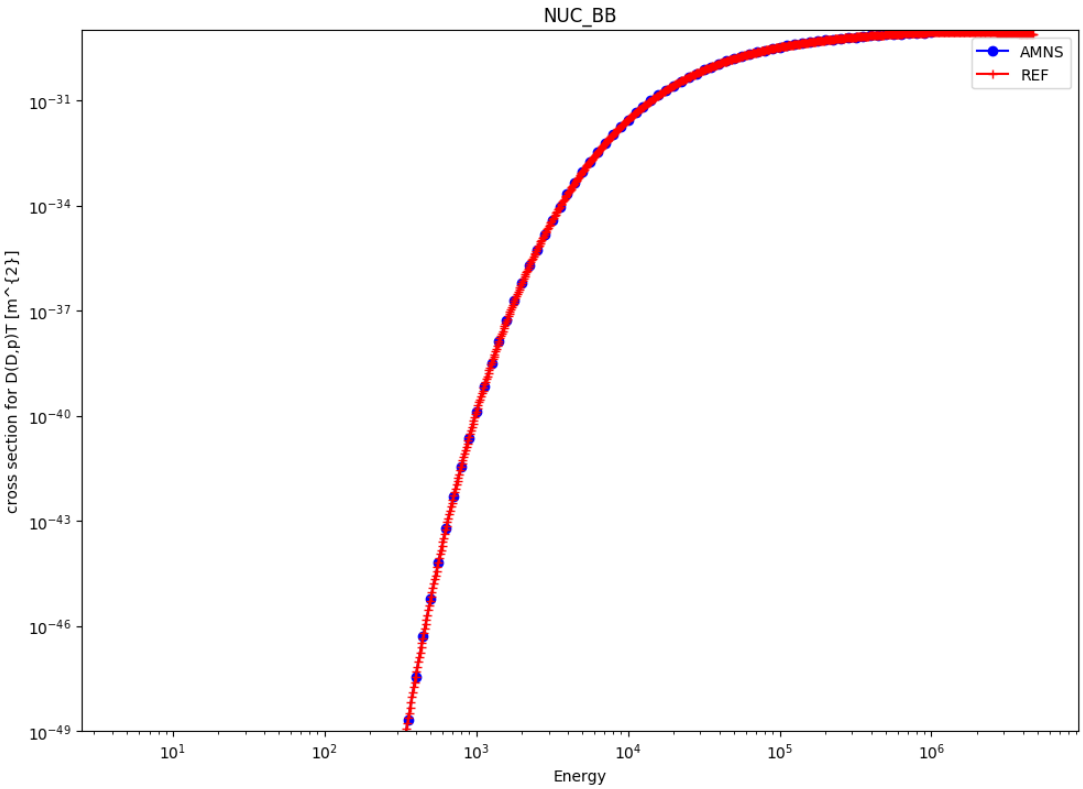

NUC_BT for E=28480.8587
AMNS
REF
Reaction rate for bt D(T,n)^4He [m^{3} s^{-1}]
Ti
$10^{-21}$
$10^{-22}$
$10^{-23}$
$10^{0}$
$10^{2}$
$10^{4}$
$10^{6}$
$10^{8}$
$10^{10}$

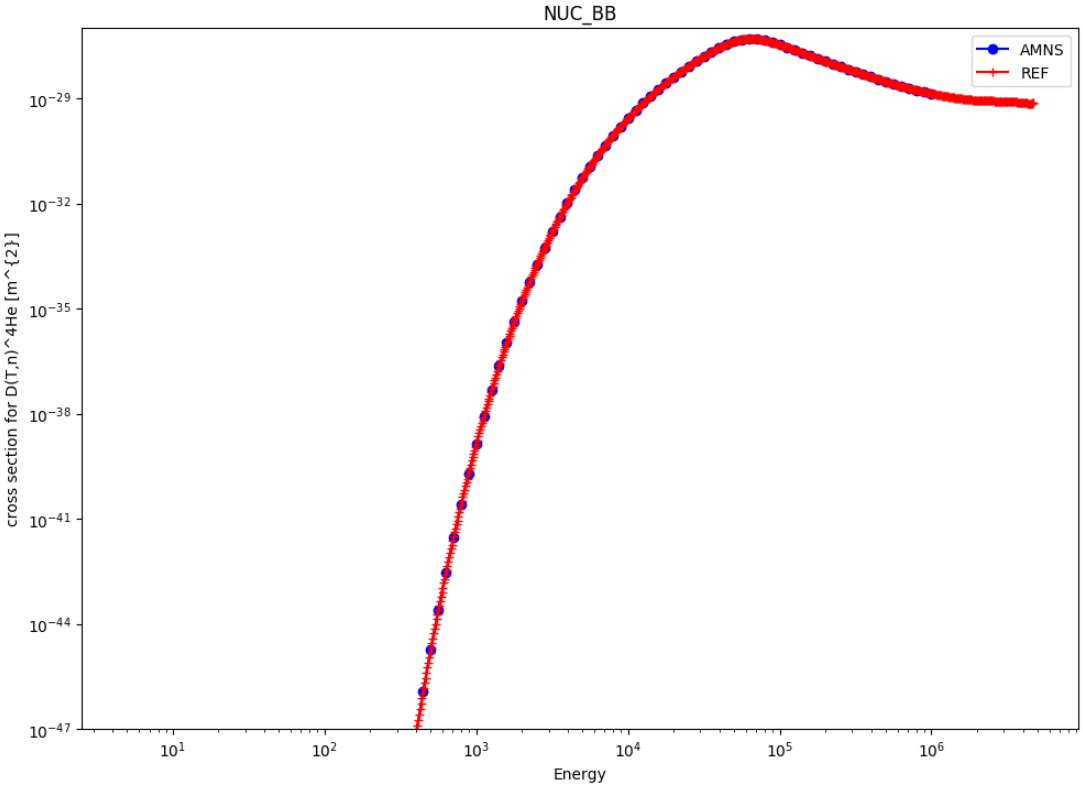

NUC_BT for E=28480.8587
AMNS
REF
Reaction rate for bt T(D,n)^4He [m^{3} s^{-1}]
Ti
$10^{-21}$
$10^{-22}$
$10^{-23}$
$10^{-24}$
$10^{0}$
$10^{2}$
$10^{4}$
$10^{6}$
$10^{8}$
$10^{10}$

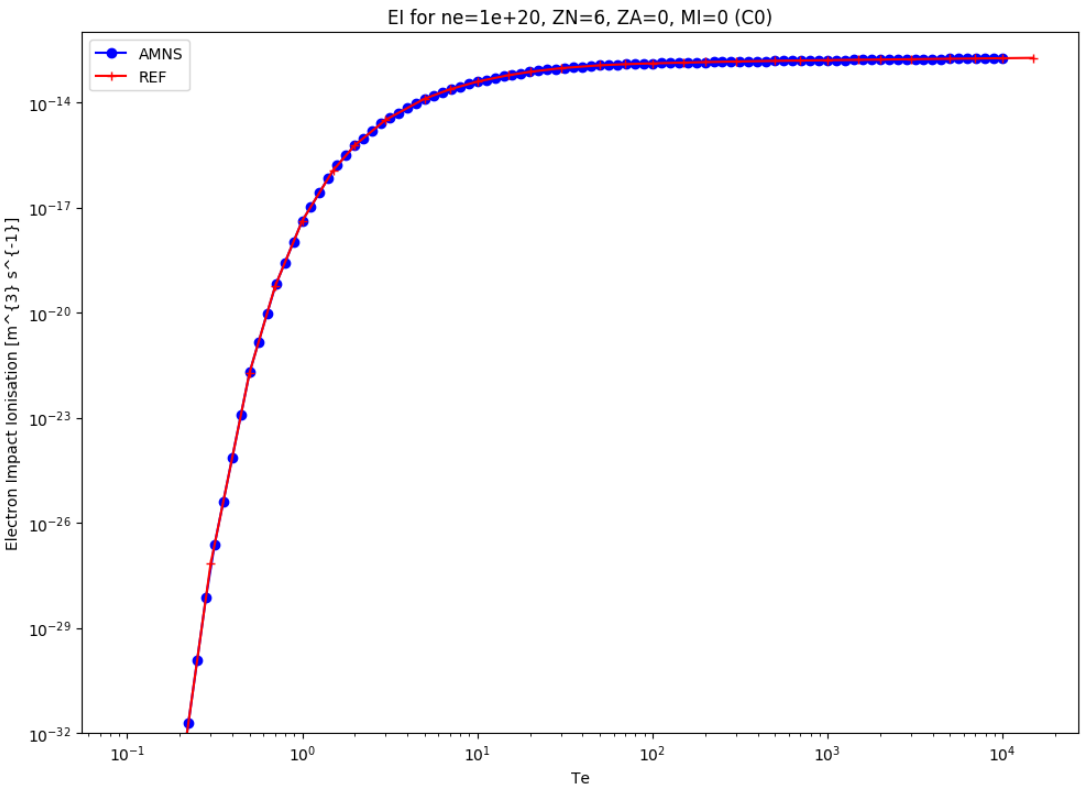

CX for ne=1e+20, ZN=6, ZA=1, MI=0 (C1+)
AMNS
REF
CX recombination coeffts [m^{3} s^{-1}]
Te

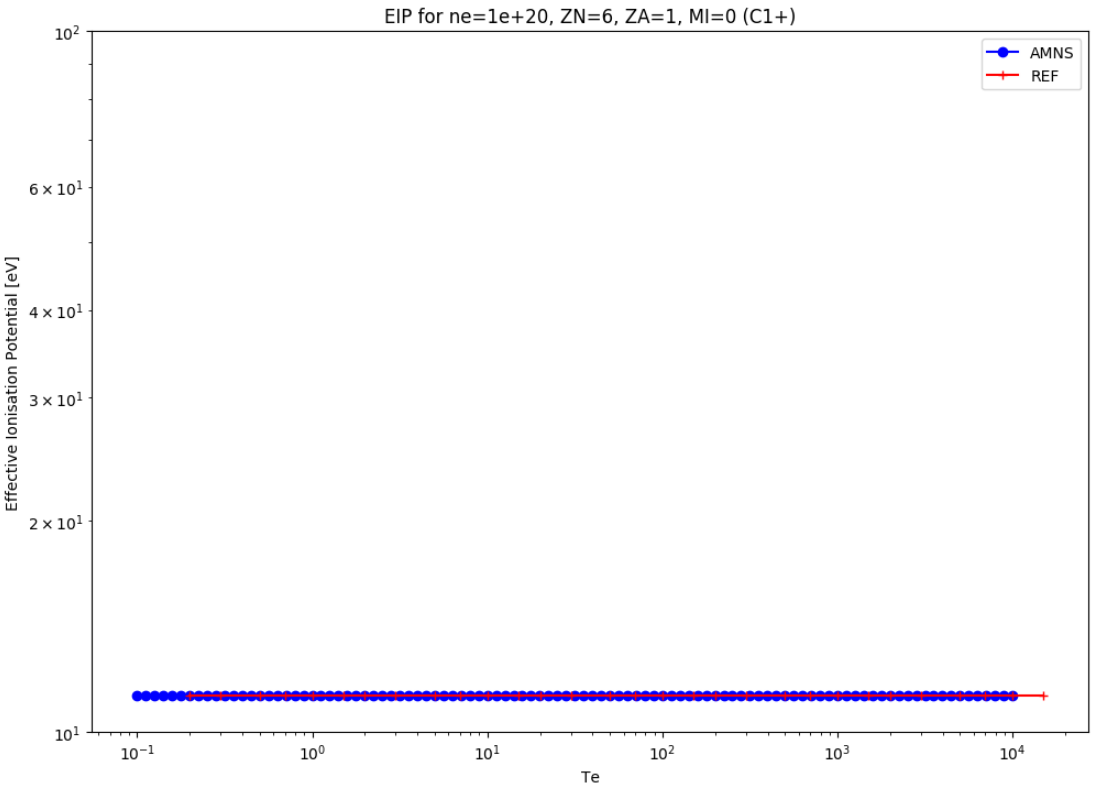

NUC_BB
AMNS
REF
cross section for D(^3He,p)^4He [m^{2}]
Energy

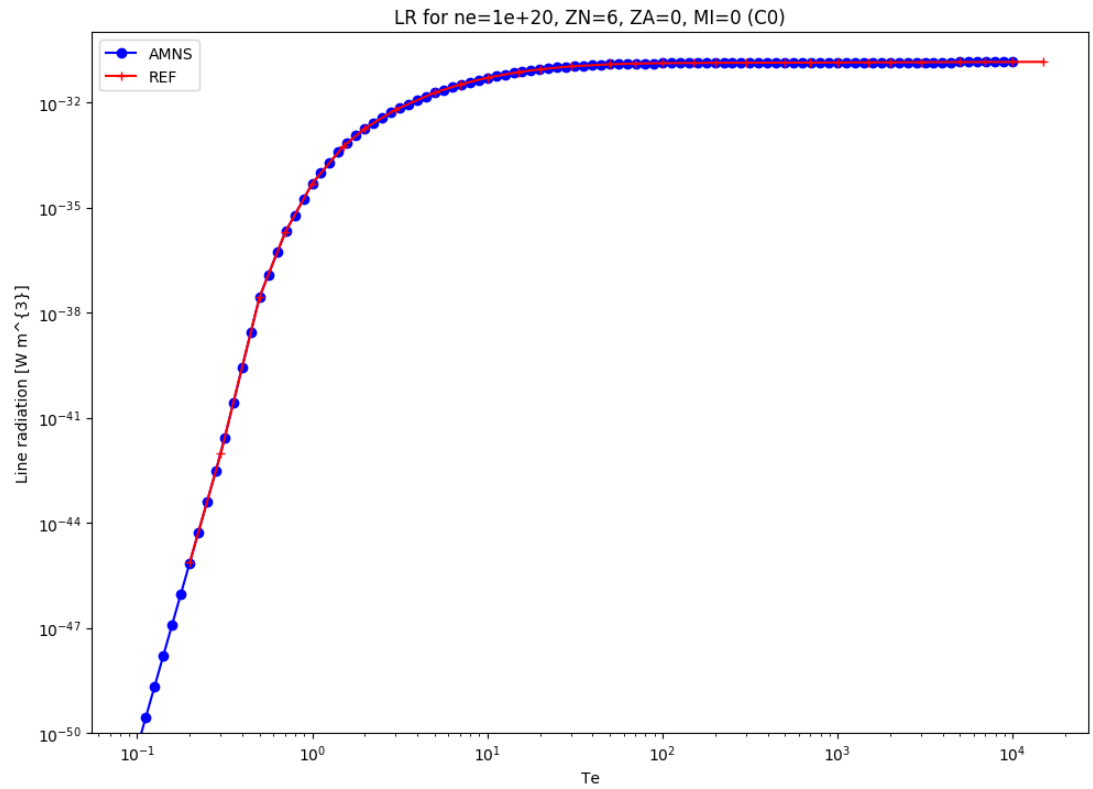

NUC_BB
AMNS
REF
cross section for D(D,n)^3He [m^{2}]
Energy

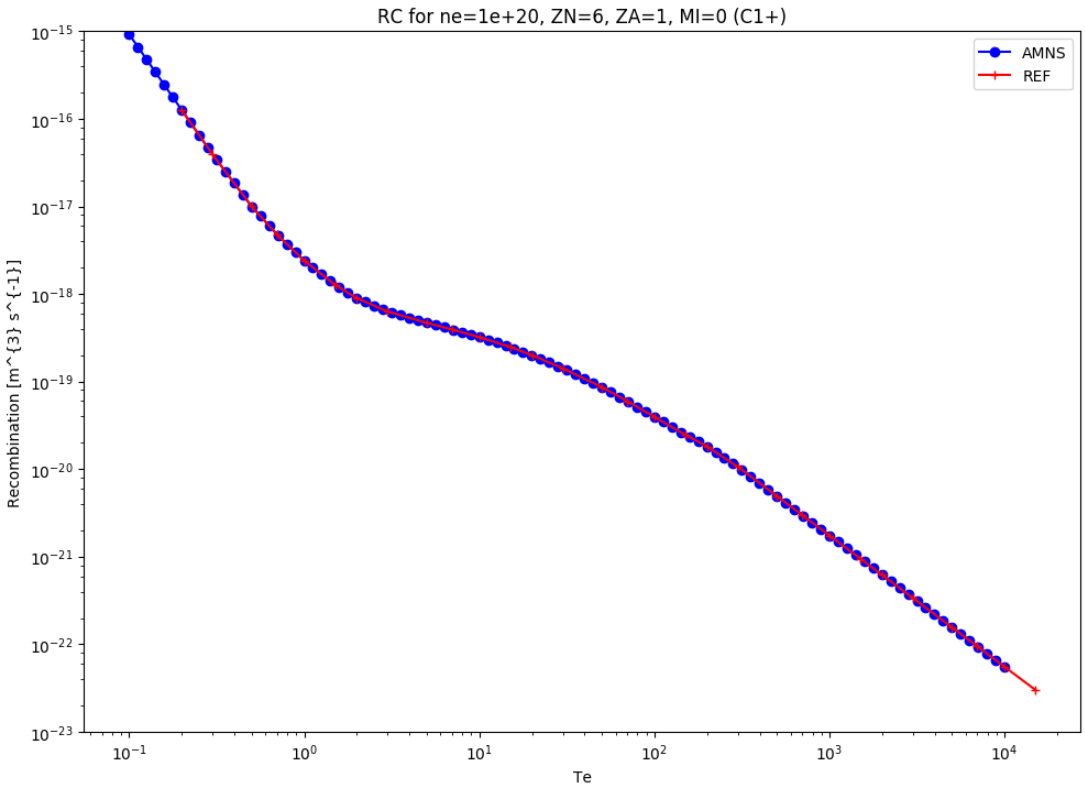

NUC_BB
AMNS
REF
cross section for D(D,p)T [m^{2}]
Energy

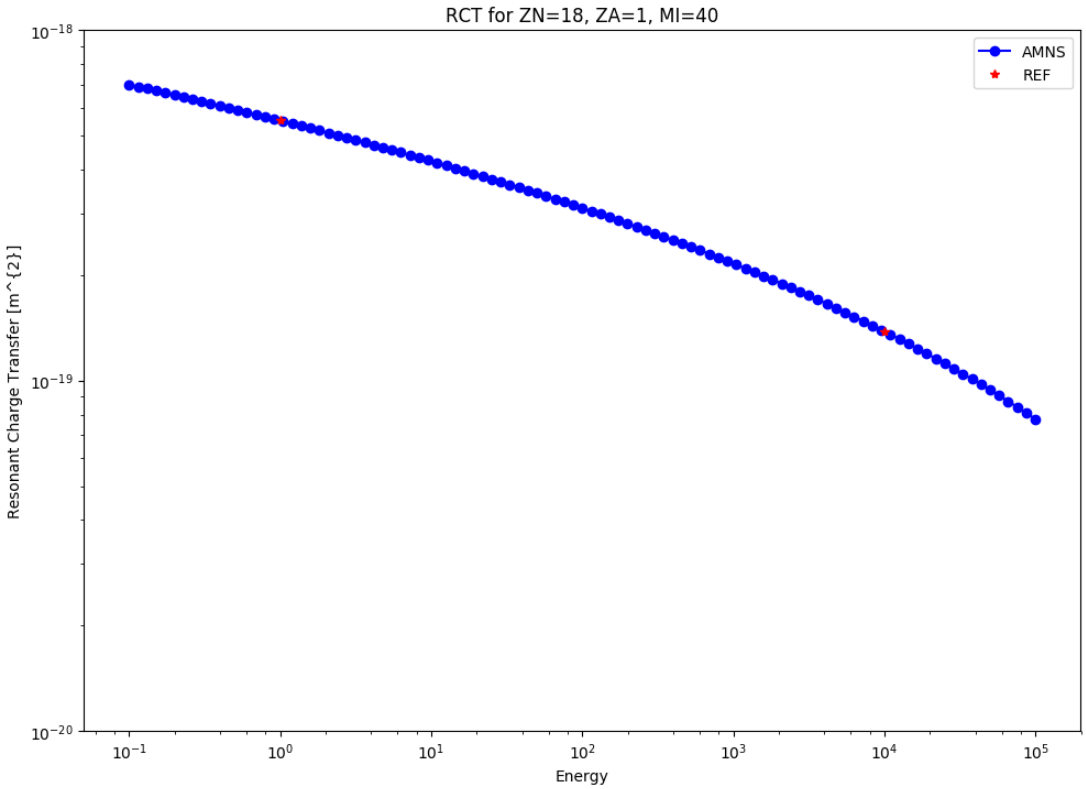

NUC_BB
AMNS
REF
cross section for D(T,n)^4He [m^{2}]
Energy

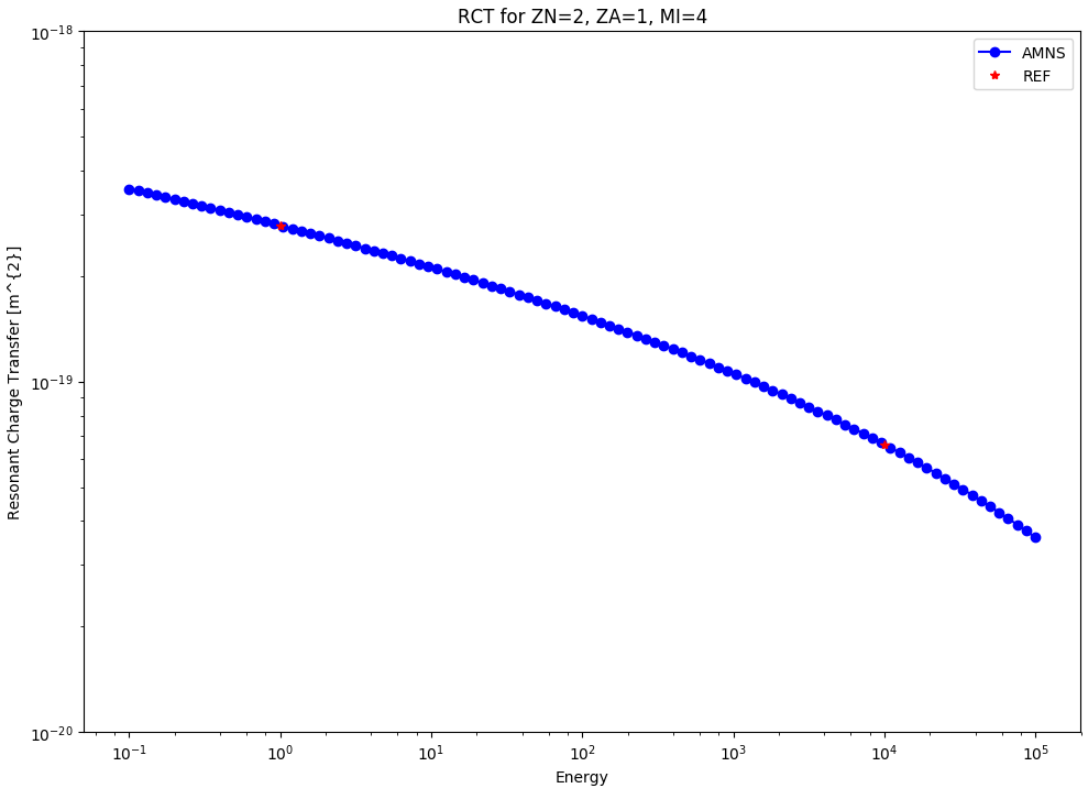

EI for ne=1e+20, ZN=6, ZA=0, MI=0 (C0)
AMNS
REF
Electron Impact Ionisation [m^{3} s^{-1}]
Te

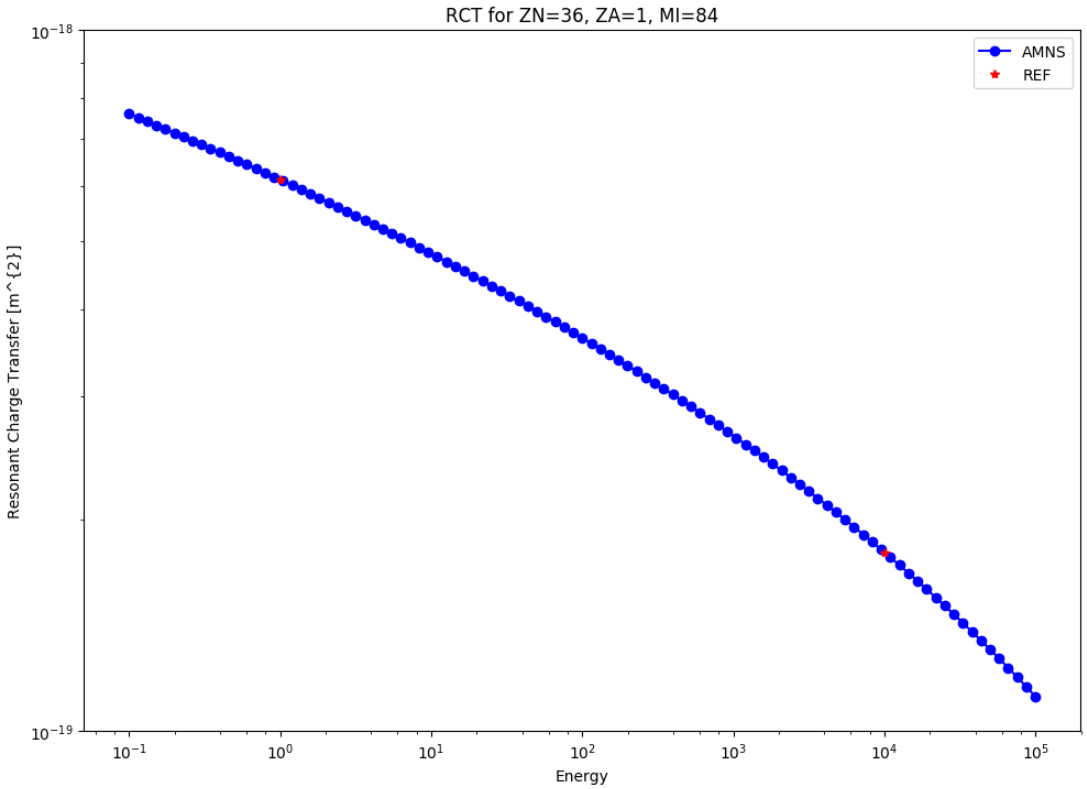

EIP for ne=1e+20, ZN=6, ZA=1, MI=0 (C1+)
AMNS
REF
Effective Ionisation Potential [eV]
Te

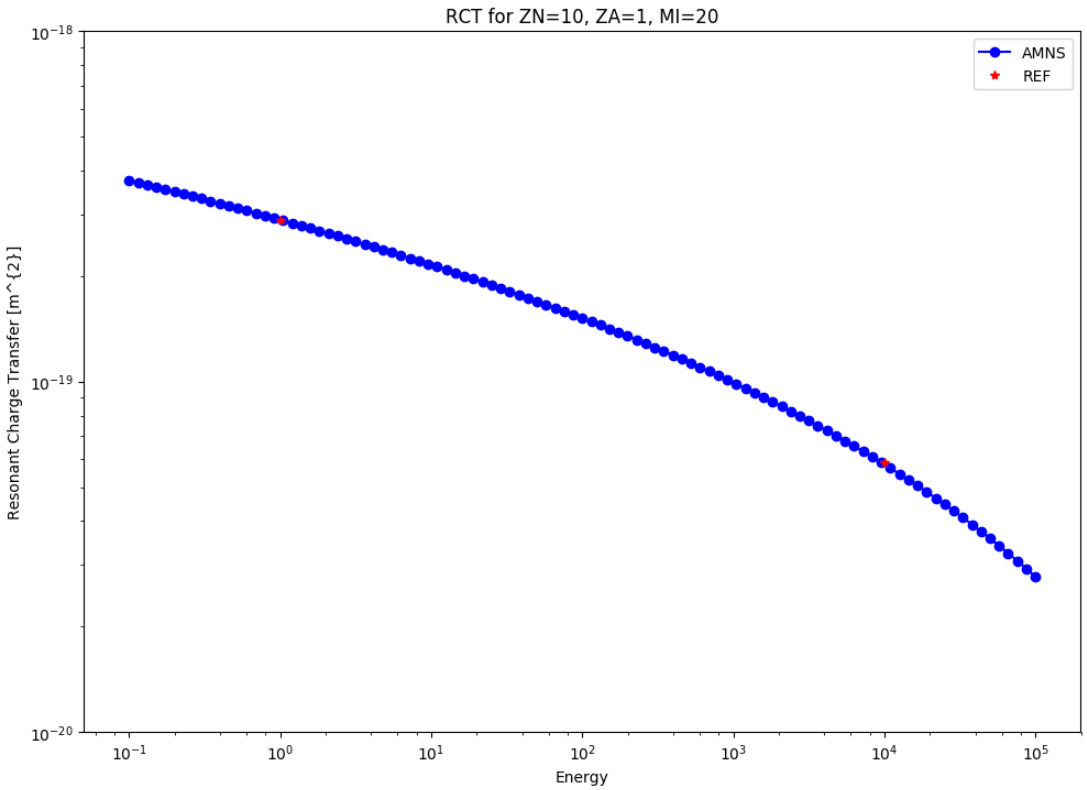

LR for ne=1e+20, ZN=6, ZA=0, MI=0 (C0)
AMNS
REF
Line radiation [W m^{3}]
Te

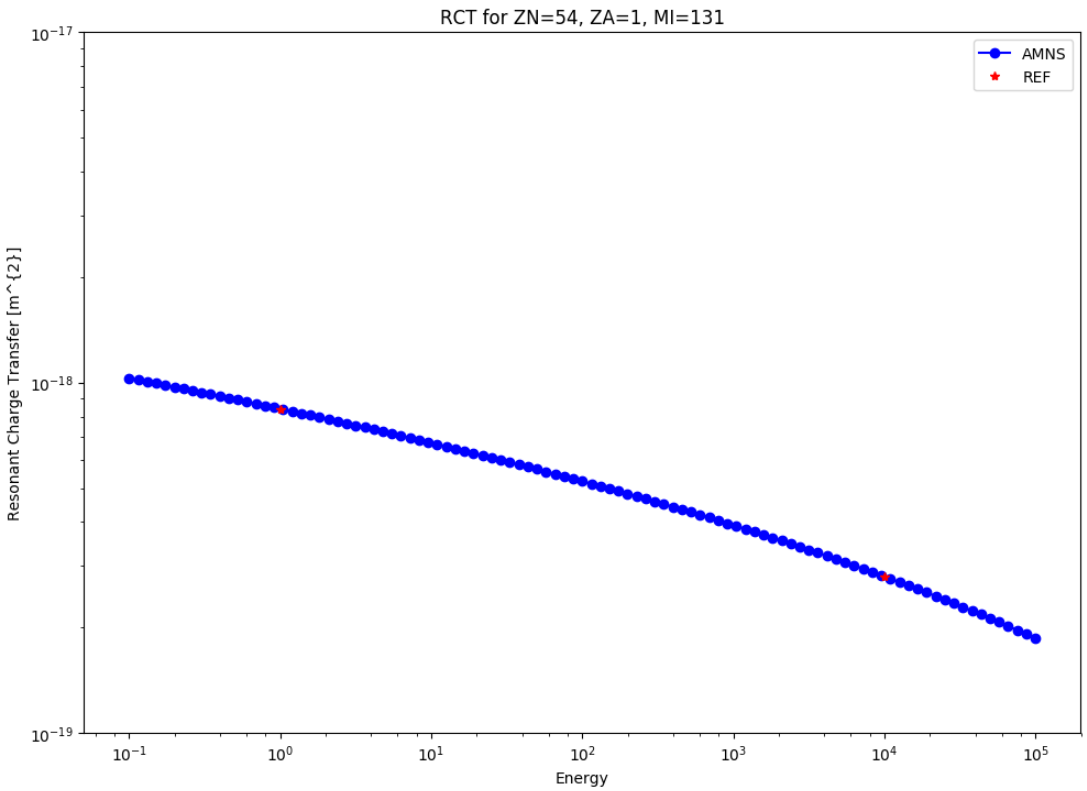

RC for ne=1e+20, ZN=6, ZA=1, MI=0 (C1+)
AMNS
REF
Recombination [m^{3} s^{-1}]
Te

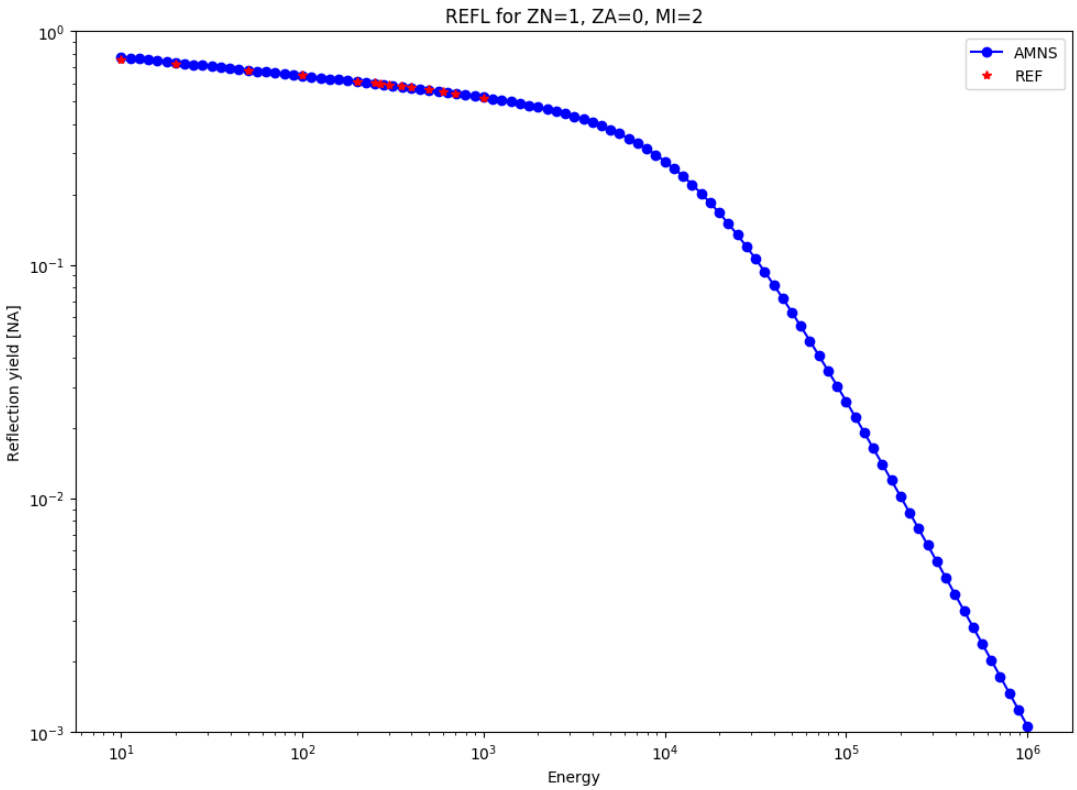

RCT for ZN=18, ZA=1, MI=40
AMNS
REF
Resonant Charge Transfer [m^{2}]
Energy

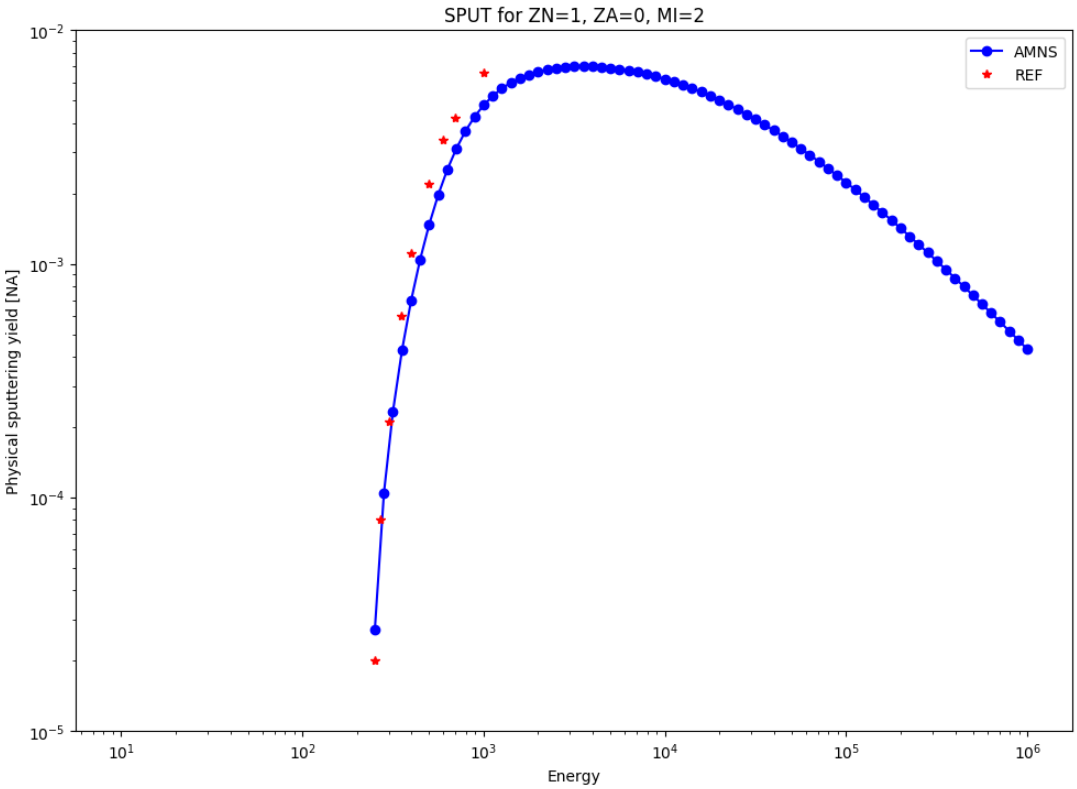

RCT for ZN=2, ZA=1, MI=4
AMNS
REF
Resonant Charge Transfer [m^{2}]
Energy
$10^{-18}$
$10^{-19}$
$10^{-20}$
$10^{-1}$
$10^{0}$
$10^{1}$
$10^{2}$
$10^{3}$
$10^{4}$
$10^{5}$

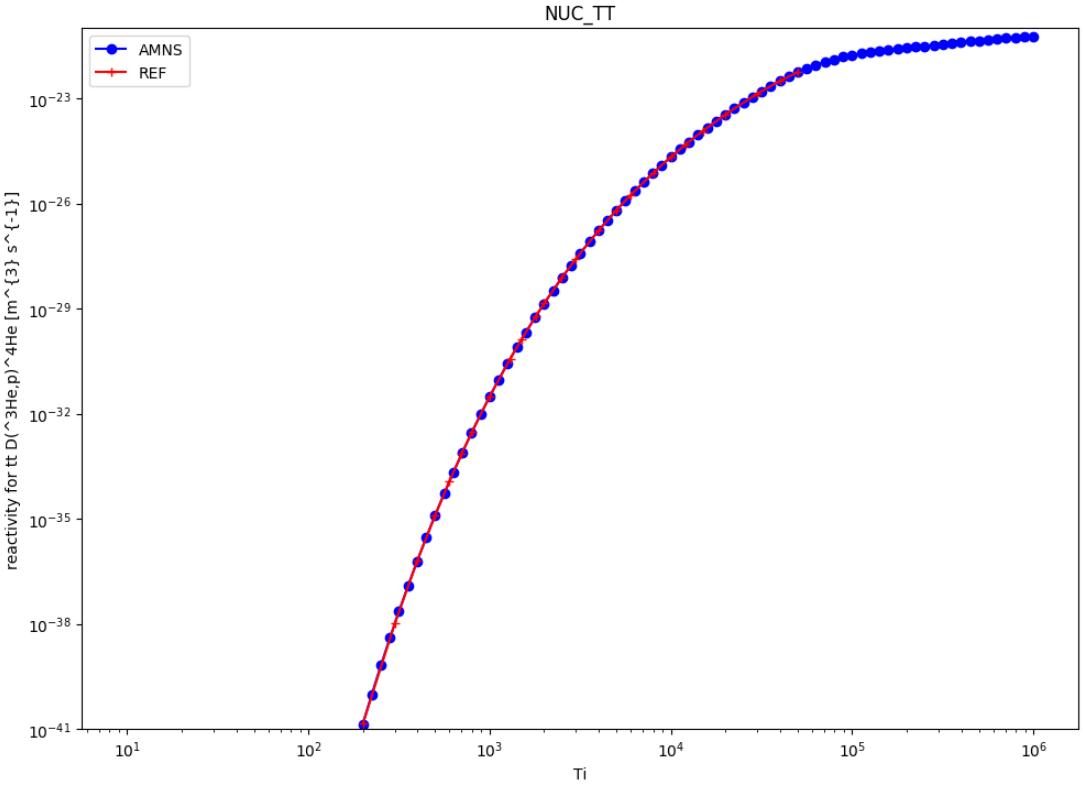

RCT for ZN=36, ZA=1, MI=84
AMNS
REF
Resonant Charge Transfer [m^{2}]
Energy
$10^{-18}$
$10^{-19}$
$10^{-1}$
$10^{0}$
$10^{1}$
$10^{2}$
$10^{3}$
$10^{4}$
$10^{5}$

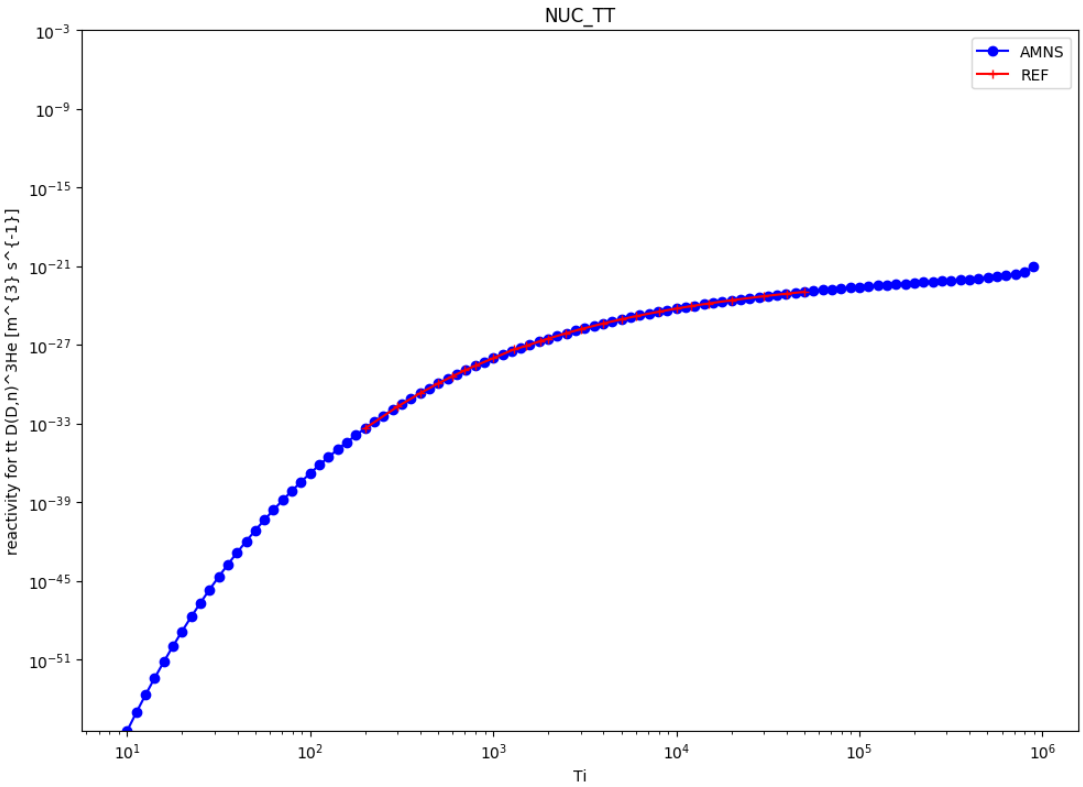

RCT for ZN=10, ZA=1, MI=20
AMNS
REF
Resonant Charge Transfer [m^{2}]
Energy
$10^{-18}$
$10^{-19}$
$10^{-20}$
$10^{-1}$
$10^{0}$
$10^{1}$
$10^{2}$
$10^{3}$
$10^{4}$
$10^{5}$

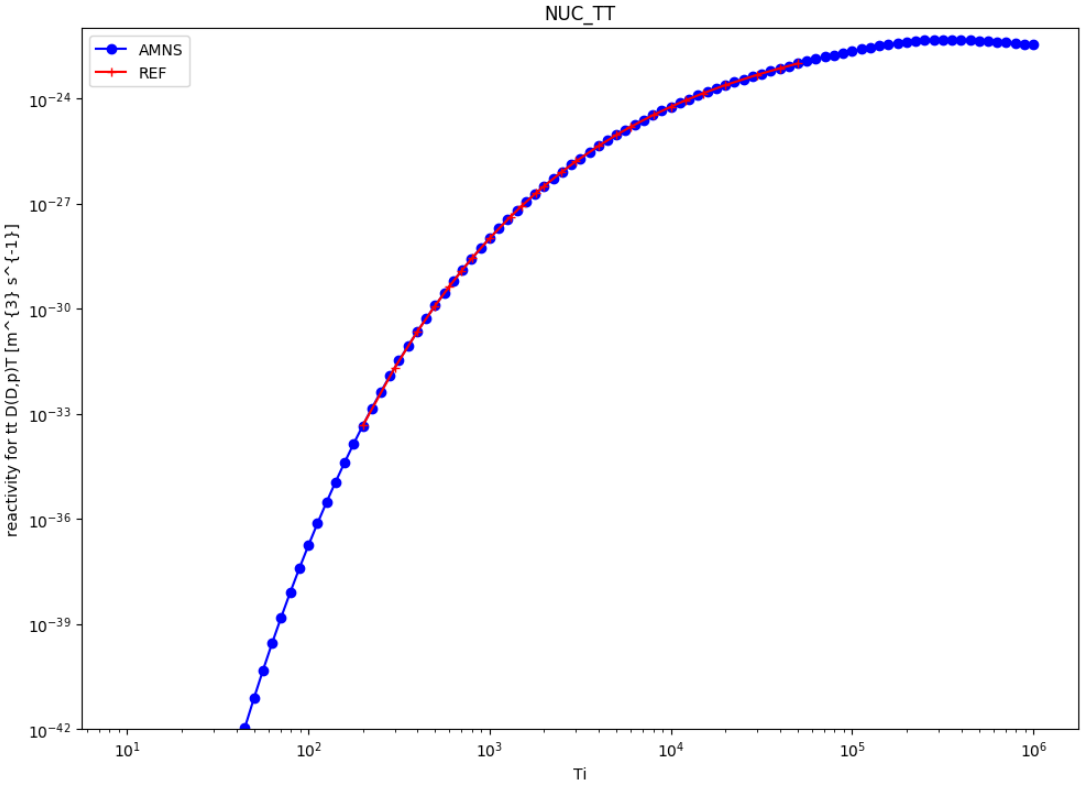

RCT for ZN=54, ZA=1, MI=131
AMNS
REF
Resonant Charge Transfer [m^{2}]
Energy
$10^{-17}$
$10^{-18}$
$10^{-19}$
$10^{-1}$
$10^{0}$
$10^{1}$
$10^{2}$
$10^{3}$
$10^{4}$
$10^{5}$

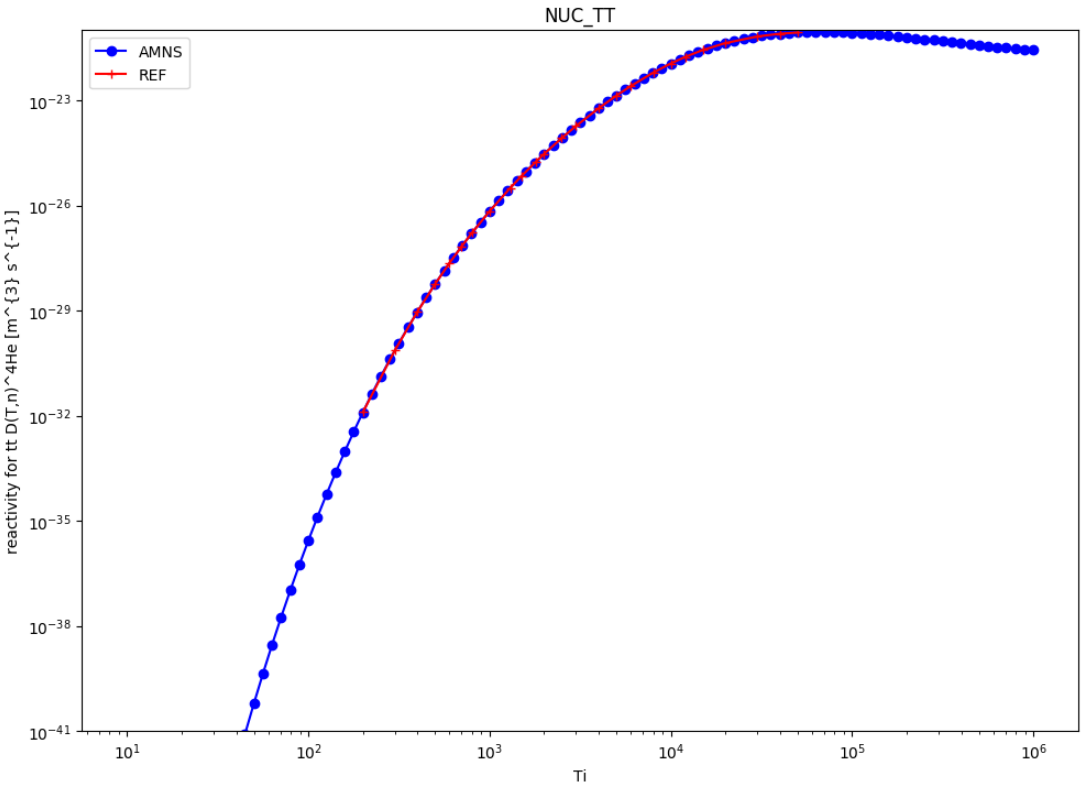

REFL for ZN=1, ZA=0, MI=2
AMNS
REF
Reflection yield [NA]
Energy

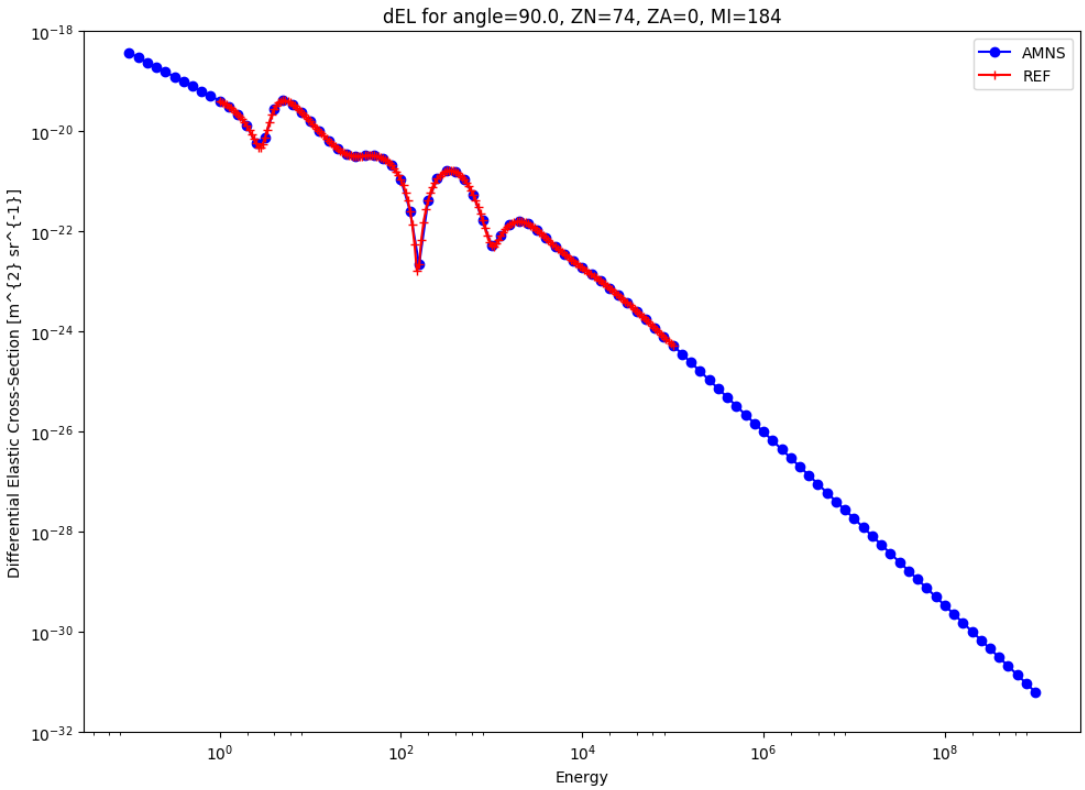

SPUT for ZN=1, ZA=0, MI=2
AMNS
REF
Physical sputtering yield [NA]
Energy

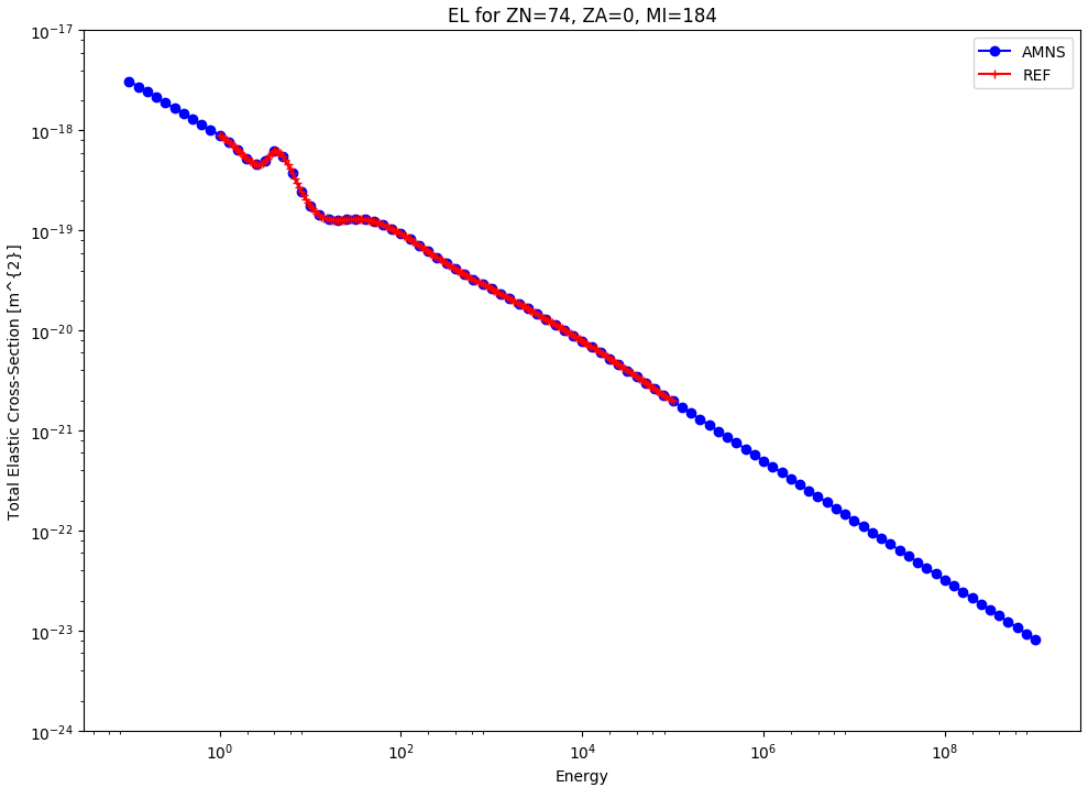

NUC_TT
AMNS
REF
reactivity for tt D(^3He,p)^4He [m^{3} s^{-1}]
Ti

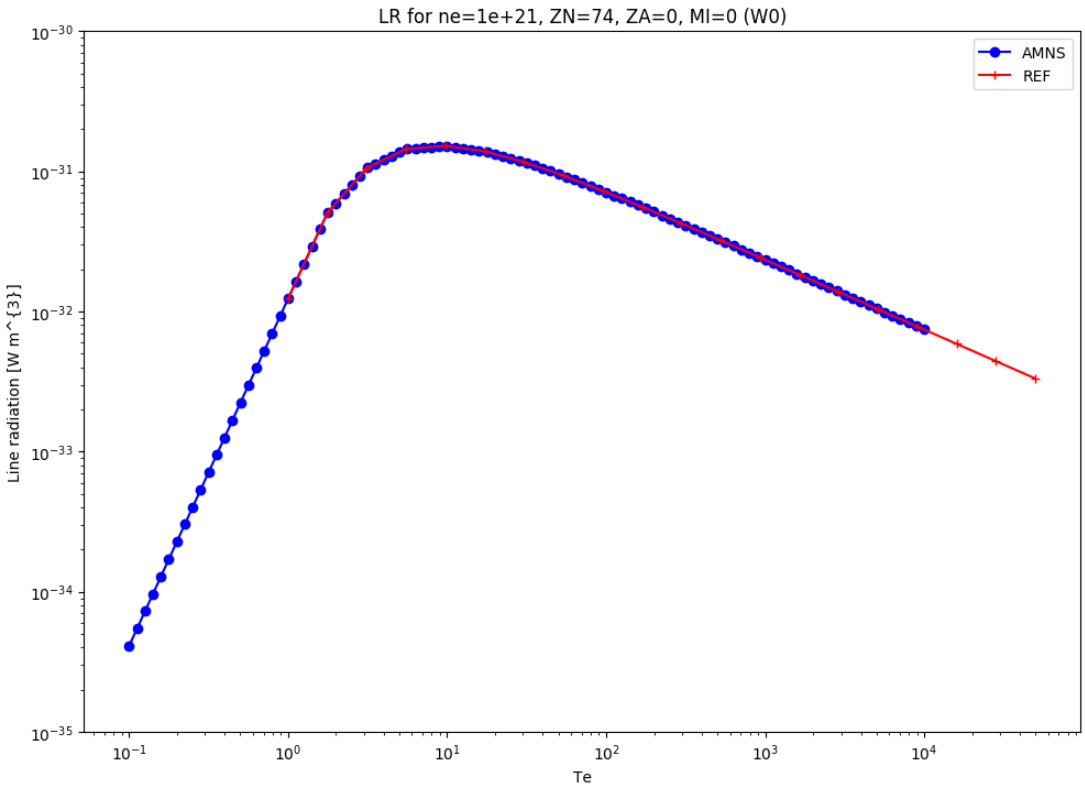

NUC_TT
AMNS
REF
reactivity for tt D(D,n)^3He [m^{3} s^{-1}]
Ti


NUC_TT
AMNS
REF
reactivity for tt D(D,p)T [m^{3} s^{-1}]
Ti


NUC_TT
AMNS
REF
reactivity for tt D(T,n)^4He [m^{3} s^{-1}]
Ti


dEL for angle=90.0, ZN=74, ZA=0, MI=184
AMNS
REF
Differential Elastic Cross-Section [m^{2} sr^{-1}]
Energy


EL for ZN=74, ZA=0, MI=184
AMNS
REF
Total Elastic Cross-Section [m^{2}]
Energy




# 9 AMNS Compositions

We look at the compositions sub-structure, and give an example

```
compositions%
        nuclei(:)%
                zn
                amn
                label
        ions(:)%
                nucindex
                zion
                imp_flag
                label
        impurities(:)%
                nucindex
                i_ion
                nzimp
                zmin
                zmax
                label
        neutralscomp(:)%
                neutcomp(:)%
                        nucindex
                        multiplicity
                type(:)%
                        id
                        flag
                        description
                label
```

We will consider the example of D+, T+, C1+ .. C6+, D2, DT, T2, D0 (cold), D0 (thermal), T0 (cold), T0 (thermal), C0 (cold), C0 (thermal)

```
compositions%nuclei(1)%zn = 1.0
compositions%nuclei(1)%amn = 2.0
compositions%nuclei(1)%label = 'D'

compositions%nuclei(2)%zn = 1.0
compositions%nuclei(2)%amn = 3.0
compositions%nuclei(2)%label = 'T'

compositions%nuclei(3)%zn = 6.0
compositions%nuclei(3)%amn = 12.0
compositions%nuclei(3)%label = 'C'

compositions%ions(1)%nucindex = 1
compositions%ions(1)%zion = 1.0
compositions%ions(1)%imp_flag = 0
compositions%ions(1)%label = 'D+'

compositions%ions(2)%nucindex = 2
compositions%ions(2)%zion = 1.0
compositions%ions(2)%imp_flag = 0
compositions%ions(2)%label = 'T+'

compositions%impurities(1)%nucindex = 3
compositions%impurities(1)%i_ion = 0
compositions%impurities(1)%nzimp = 6
compositions%impurities(1)%zmin = 1.0 2.0 3.0 4.0 5.0 6.0
compositions%impurities(1)%zmax = 1.0 2.0 3.0 4.0 5.0 6.0
compositions%impurities(1)%label = 'C1+' 'C2+' 'C3+ 'C4+' 'C5+' 'C6+'

compositions%neutralscomp(1)%neutcomp(1)%nucindex = 1
compositions%neutralscomp(1)%neutcomp(1)%multiplicity = 2
compositions%neutralscomp(1)%type(1)%id = 'cold'
compositions%neutralscomp(1)%type(1)%flag = 0
compositions%neutralscomp(1)%type(1)%description = 'Cold neutrals'
compositions%neutralscomp(1)%label = 'D2'

compositions%neutralscomp(2)%neutcomp(1)%nucindex = 1
compositions%neutralscomp(2)%neutcomp(1)%multiplicity = 1
compositions%neutralscomp(2)%neutcomp(2)%nucindex = 2
compositions%neutralscomp(2)%neutcomp(2)%multiplicity = 1
compositions%neutralscomp(2)%type(1)%id = 'cold'
compositions%neutralscomp(2)%type(1)%flag = 0
compositions%neutralscomp(2)%type(1)%description = 'Cold neutrals'
compositions%neutralscomp(2)%label = 'DT'

compositions%neutralscomp(3)%neutcomp(1)%nucindex = 2
compositions%neutralscomp(3)%neutcomp(1)%multiplicity = 2
compositions%neutralscomp(3)%type(1)%id = 'cold'
compositions%neutralscomp(3)%type(1)%flag = 0
compositions%neutralscomp(3)%type(1)%description = 'Cold neutrals'
compositions%neutralscomp(3)%label = 'D2'

compositions%neutralscomp(4)%neutcomp(1)%nucindex = 1
compositions%neutralscomp(4)%neutcomp(1)%multiplicity = 1
compositions%neutralscomp(4)%type(1)%id = 'cold'
compositions%neutralscomp(4)%type(1)%flag = 0
compositions%neutralscomp(4)%type(1)%description = 'Cold neutrals'
compositions%neutralscomp(4)%type(2)%id = 'thermal'
```

```
compositions%neutralscomp(4)%type(2)%flag = 1
compositions%neutralscomp(4)%type(2)%description 'Thermal neutrals'
compositions%neutralscomp(4)%label = 'D0'

compositions%neutralscomp(5)%neutcomp(1)%nucindex = 2
compositions%neutralscomp(5)%neutcomp(1)%multiplicity = 1
compositions%neutralscomp(5)%type(1)%id = 'cold'
compositions%neutralscomp(5)%type(1)%flag = 0
compositions%neutralscomp(5)%type(1)%description = 'Cold neutrals'
compositions%neutralscomp(5)%type(2)%id = 'thermal'
compositions%neutralscomp(5)%type(2)%flag = 1
compositions%neutralscomp(5)%type(2)%description 'Thermal neutrals'
compositions%neutralscomp(5)%label = 'T0'

compositions%neutralscomp(6)%neutcomp(1)%nucindex = 3
compositions%neutralscomp(6)%neutcomp(1)%multiplicity = 1
compositions%neutralscomp(6)%type(1)%id = 'cold'
compositions%neutralscomp(6)%type(1)%flag = 0
compositions%neutralscomp(6)%type(1)%description = 'Cold neutrals'
compositions%neutralscomp(6)%type(2)%id = 'thermal'
compositions%neutralscomp(6)%type(2)%flag = 1
compositions%neutralscomp(6)%type(2)%description 'Thermal neutrals'
compositions%neutralscomp(6)%label = 'C0'
```

The plasma%species_index entries for the wall0d component of the wall CPO could then look like this:

```
wall%wall0d%plasma%species_index( 1,1) = 1   % D1+
wall%wall0d%plasma%species_index( 1,2) = 1
wall%wall0d%plasma%species_index( 1,3) = 0

wall%wall0d%plasma%species_index( 2,1) = 1   % T1+
wall%wall0d%plasma%species_index( 2,2) = 1
wall%wall0d%plasma%species_index( 2,3) = 0

wall%wall0d%plasma%species_index( 3,1) = 2   % C1+
wall%wall0d%plasma%species_index( 3,2) = 1
wall%wall0d%plasma%species_index( 3,3) = 1

wall%wall0d%plasma%species_index( 4,1) = 2   % C2+
wall%wall0d%plasma%species_index( 4,2) = 1
wall%wall0d%plasma%species_index( 4,3) = 2

wall%wall0d%plasma%species_index( 5,1) = 2   % C3+
wall%wall0d%plasma%species_index( 5,2) = 1
wall%wall0d%plasma%species_index( 5,3) = 3

wall%wall0d%plasma%species_index( 6,1) = 2   % C4+
wall%wall0d%plasma%species_index( 6,2) = 1
wall%wall0d%plasma%species_index( 6,3) = 4

wall%wall0d%plasma%species_index( 7,1) = 2   % C5+
wall%wall0d%plasma%species_index( 7,2) = 1
wall%wall0d%plasma%species_index( 7,3) = 5

wall%wall0d%plasma%species_index( 8,1) = 2   % C6+
wall%wall0d%plasma%species_index( 8,2) = 1
wall%wall0d%plasma%species_index( 8,3) = 6

wall%wall0d%plasma%species_index( 9,1) = 3   % D, thermal
wall%wall0d%plasma%species_index( 9,2) = 4
```

```
wall%wall0d%plasma%species_index( 9,3) = 2

wall%wall0d%plasma%species_index(10,1) = 3   % T, thermal
wall%wall0d%plasma%species_index(10,2) = 5
wall%wall0d%plasma%species_index(10,3) = 2

wall%wall0d%plasma%species_index(11,1) = 3   % C, thermal
wall%wall0d%plasma%species_index(11,2) = 6
wall%wall0d%plasma%species_index(11,3) = 2

wall%wall0d%plasma%species_index(12,1) = 3   % D2, cold
wall%wall0d%plasma%species_index(12,2) = 1
wall%wall0d%plasma%species_index(12,3) = 1

wall%wall0d%plasma%species_index(13,1) = 3   % DT, cold
wall%wall0d%plasma%species_index(13,2) = 2
wall%wall0d%plasma%species_index(13,3) = 1

wall%wall0d%plasma%species_index(14,1) = 3   % T2, cold
wall%wall0d%plasma%species_index(14,2) = 3
wall%wall0d%plasma%species_index(14,3) = 1

wall%wall0d%plasma%species_index(15,1) = 3   % D, cold
wall%wall0d%plasma%species_index(15,2) = 4
wall%wall0d%plasma%species_index(15,3) = 1

wall%wall0d%plasma%species_index(16,1) = 3   % T, cold
wall%wall0d%plasma%species_index(16,2) = 5
wall%wall0d%plasma%species_index(16,3) = 1

wall%wall0d%plasma%species_index(17,1) = 3   % C, cold
wall%wall0d%plasma%species_index(17,2) = 6
wall%wall0d%plasma%species_index(17,3) = 1
```

last update: 2013-03-07 by dpc

# 10 Private AMNS pages

For access to the private AMNS pages [27], an AMNS password is needed.

last update: 2018-05-25 by g2dpc

[27] https://www.efda-itm.eu/AMNS/html/index.html