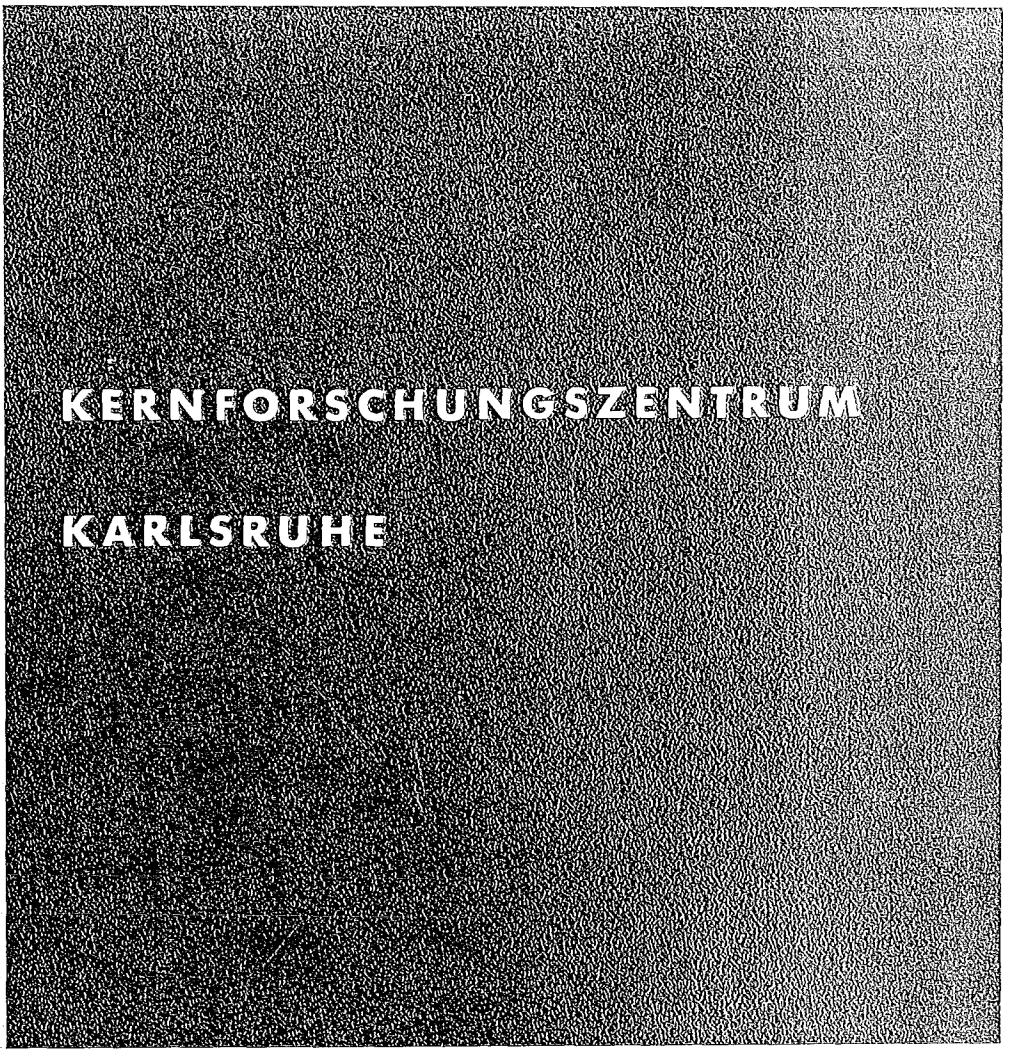

Dezember 1975

KFK 2234
NEANDC (E) 171 »U«

Institut für Neutronenphysik und Reaktortechnik
Projekt Schneller Brüter

Status of the Nuclear Data Library KEDAK-3 October 1975

B. Goel, B. Krieg

GESELLSCHAFT
FÜR
KERNFORSCHUNG M.B.H.

KARLSRUHE

GESELLSCHAFT FÜR KERNFORSCHUNG M. B. H.

KARLSRUHE

KERNFORSCHUNGSZENTRUM KARLSRUHE

KFK 2234
NEANDC(E) 171 "U"

Institut für Neutronenphysik und Reaktortechnik

Projekt Schneller Brüter

Status of the Nuclear Data Library KEDAK-3

October 1975

B. Goel and B. Krieg

Gesellschaft für Kernforschung m.b.H., Karlsruhe

Abstract

This document summarises the status and the contents
of the lately revised version of KEDAK.

Stand der nuklearen Datenbibliothek KEDAK-3

Zusammenfassung

Dieser Bericht gibt eine Übersicht über den Stand und den
Inhalt der neuesten Version von KEDAK.

List of Tables

	Page
Table 1 Status of the evaluation for different KEDAK-3 materials	3
Table 2 List of Contents of KEDAK-3	7
Table 3 Nomenclature of data type on KEDAK	29

The 3rd version of the Karlsruhe nuclear data library KEDAK is released in October 1975. This version of KEDAK contains some marked changes with respect to the previous two versions [1,2]. One major change is that, in order to save computer storage area, the energy grid is not the same for all the data types, it is rather choosen individually for each cross section type. As a consequence all the energy points have been dropped, which can be generated by linear interpolation of the neighbouring data.

Some new data types have been introduced in KEDAK-3, these are described in detail in reference 3. One of these data types is AASTATUS in which the text information about the status of the data for each material is stored and will be regularly updated.

For all the materials on KEDAK the atomic weights and the abundancy values are revised. These data are taken from Wapstra and Gove[4] and de Bièvre[5]. In the energy region where the neutron elastic scattering is isotrope in the center of mass system the values of $\bar{\mu}_1$ are corrected for all the isotopes. Other changes in KEDAK with respect to the previous versions are summarised in table 1. The table 2 gives a list of the contents of KEDAK-3. It is intended to publish the contents of KEDAK-3 in graphical form. The first part showing plots for the non fissile materials is complete[6].

The nomenclature of the data types on KEDAK is given in table 3. The relationship among the redundant data stored on KEDAK is as follows:

absorption cross section (SGA)

$$\sigma_{ab} = \sigma(n,\gamma) + \sigma(n,f) + \sigma(n,p) + \sigma(n,d) + \sigma(n,\alpha)$$

nonelastic cross section (SGX)

$$\sigma_{non} = \sigma_{ab} + \sigma(n,n') + \sigma(n,2n) + \sigma(n,3n)$$
$$= \sigma_t - \sigma(n,n)$$

Zum Druck eingereicht am: 2.12.1975

transport cross section (SGTR)

$$\sigma_{tr} = \sigma_t - \sigma(n,n) \cdot \bar{\mu}_e$$

It should be noted that due to historical reasons the KEDAK-definition of the absorption cross section differs from that of CINDA.
In KEDAK σ_{ab} contains all those processes in which no neutron appears in the exit channel. The only exception is σ_f which is included in σ_{ab}.

References

1. J.J. Schmidt, KFK 120(1966)
2. B. Hinkelmann, B. Krieg, I. Langner, J.J. Schmidt and D. Woll, KFK 1340(1971)
3. B. Krieg, KFK 1725(1973)
4. A.H. Wapstra and N.B. Gove Nucl. Data Tables 9 (1971) 265
5. P. de Bièvre, private communications.
6. B. Goel, KFK 2233(1975)

TABLE 1: Status of the evaluation for different KEDAK-3 materials

Material name	References	Comments
H 1		Only ISOT1 and ISOT2 are available.
H H1 (H Bound in H_2) H O1 (H bound in H_2O)	J.J.Schmidt KFK 120 (1966) R.Mayer KFK 1272/2 (1972) p. 122-12 ff B. Goel 1975 to be published	1971: Data extended to 15 MeV Revision of data for σ_t above 700 keV, σ_c throughout the energy range (0.001 eV to 15 MeV), angular distribution for elastic scattering and $\bar{\mu}_1$. 1975: σ_t and σ(n,n) revised below 700 keV, for H O1.
H 2 (D)	J.J.Schmidt KFK 120 (1966) B. Goel 1975 to be published	1975: Data extended to 15 MeV and revised for σ_c, σ_t, σ_n and σ(n,2n) above 1 keV.
He 3	J.J.Schmidt KFK 120 (1966)	Only data for σ(n,p) available between 0.01 keV and 10 MeV.
He 4	J.J.Schmidt KFK 120 (1966)	Data only upto 10 MeV.
C 12	J.J.Schmidt KFK 120 (1966) R. Meyer KFK 1272 (1972) B. Goel 1975 to be published	1971: Data extended to 15 MeV. Revision of data for σ(n,n'), σ(n,p), σ(n,α), σ(n,3α) and 4 levels of inelastic scattering 1975: Data revised for σ_c above 1 eV and σ_t below 1,4 MeV.
N	B. Hinkelmann et al. KFK 1340 (1971)	Only angular distributions of neutron elastic scattering for 48 energies between 100 keV and 15.8 MeV are available
O 16	J.J.Schmidt KFK 120 (1966) F. Weller and B. Goel 1975 to be published	1975: Data extended to 15 MeV. Data revised for scattering cross sections, σ_c, σ(n,p) σ (n,d) and σ (n,α).

Table 1 cont.

Material name	References	Comments
Na 23	J.J.Schmidt KFK 120 (1966) R. Meyer, unpublished (1973) B. Goel 1975 to be published	1970: Data extended to 15 MeV. New evaluation for $\sigma(n,p)$, $\sigma(n,\alpha)$, $\sigma(n,2n)$ and σ_c above 1 MeV. 1971: Reevaluation of Resonance data in the energy range 1 keV to 60 keV. 1975: Scattering data revised above 4 MeV and σ_c revised between 60 keV and 1 MeV.
Al 27	J.J.Schmidt KFK 120 (1966) B. Hinkelmann et al. B. Goel 1975 to be published	1967-1969: Reevaluation of data for resolved and statistical resonance parameter, elastic scattering and its angular distribution above 100 keV. 1975: Data for 5.9 keV resonance revised σ_c revised between 0.1 eV and 7 keV. The data for $\sigma(n,n')$ $\sigma(n,p)$ and $\sigma(n,\alpha)$ are also modified above 10 MeV.
Cl	B. Schatz unpublished	Data originates from UNC-5067 (1963)
Cl 35 Cl 37		Only ISOT1 and ISOT2 are available
Cr	J.J.Schmidt KFK 120 (1966) R. Meyer unpublished (1970) B. Goel 1975 to be published	1970: Data extended to 15 MeV Data improved for σ_c above 1 MeV and for $\sigma(n,p)$, $\sigma(n,\alpha)$, and $\sigma(n,2n)$ 1975: Data revised for σ_c above 100 keV and $\sigma(n,n')$ above 4 MeV.
Cr 50 Cr 52 Cr 53 Cr 54	R. Meyer unpublished (1970)	Only data for resonance parameters, $\sigma(n,p)$, $\sigma(n,\alpha)$, $\sigma(n,2n)$, ISOT1 and ISOT2 are available

Table 1 cont.

Material name	References	Comments
Fe	J.J.Schmidt KFK 120 (1966) R. Meyer, unpublished (1970)	1970: Data extended to 15 MeV Reevaluation of σ_c above 1 MeV and of $\sigma(n,p)$, $\sigma(n,\alpha)$ and $\sigma(n,2n)$ 1975: Data are being revised
Fe 54 Fe 56 Fe 57 Fe 58	R. Meyer, unpublished (1970)	Only data for resonance parameter, $\sigma(n,\alpha)$, $\sigma(n,2n)$, ISOT1 and ISOT2 are available Only data for $\sigma(n,p)$, $\sigma(n,\alpha)$, average level spacing, ISOT1 and ISOT2 are available.
Ni	J.J.Schmidt KFK 120 (1966) R. Meyer, unpublished (1970) B. Goel 1975 to be published	1970: Data extended to 15 MeV. Reevaluation of σ_c above 1 MeV and of $\sigma(n,p)$, $\sigma(n,\alpha)$ and $\sigma(n,2n)$ 1975: σ_c revised above 200 keV. $\sigma(n,n')$ revised above 4 MeV.
Ni 58 Ni 60 Ni 61 Ni 62 Ni 64	R. Meyer, unpublished (1970)	Only data for resonance parameters, $\sigma(n,p)$, $\sigma(n,\alpha)$, $\sigma(n,2n)$, ISOT1 and ISOT2 are available.
Mo	J.J.Schmidt KFK 120 (1966) R. Meyer, unpublished (1973)	1970: Data extended to 15 MeV. Reevaluation of σ_c above 1 MeV, and of $\sigma(n,p)$, $\sigma(n,\alpha)$ and $\sigma(n,2n)$
Mo 92 Mo 94 Mo 95 Mo 96 Mo 97 Mo 98 Mo 100	R. Meyer, unpublished (1973)	Data available only for resonance parameters, $\sigma(n,p)$, $\sigma(n,\alpha)$, $\sigma(n,2n)$, ISOT1 and ISOT2.
Cd	J.J.Schmidt KFK 120 (1966)	No change in data except that mentioned in introduction

Table 1 cont.

Material name		Comments
U 235	J.J.Schmidt KFK 120 (1966) B. Schatz KFK 1629 (1973) F. Weller and B. Goel 1975 to published	1973: New evaluation of $\bar{\nu}$ and all other data above the resolved resonance region. 1975: New evaluation of σ_f and σ_t above 100 keV.
U 238	J.J.Schmidt KFK 120 (1966) B. Goel, H. Küsters and F. Weller Wash.-Conference 1975 and specialist meeting Harwell 1975 and to be published	1975: Extensive revision of all the data
Pu 238	M. Caner and S. Yiftah IA 1301 (1974) B. Goel and B. Krieg 1975 to be published	New material on KEDAK
Pu 239	J.J.Schmidt KFK 120 (1966) B. Hinkelmann et al. KFK 1340 (1971) B. Goel, H. Küsters, and F. Weller, Washington Conf. 1975 and to be published	Extensive revision of most of the data
Pu 240	M. Caner and S. Yiftah IA -1243 (1972) F. Weller, B. Goel and F. Fröhner 1975 to be published	1975: New evaluation of resonance parameters and storage of pointwise data in resonance region
Pu 241 Pu 242	M. Caner and S. Yiftah IA 1275(1973) and IA 1276(1973) F. Weller 1975 to be published	1975: Storage of pointwise cross sections in the resonance region

TABLE 2: List of contents of KEDAK-3 (October 1975)

****
*   *
* H 1   *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD+	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--

****
*   *
* H H1 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	81	--	--	--
MUEL	1	1	21	1.0000E-03	--	1.5000CE+07
SGA	1	1	100	1.0000E-03	--	1.5000CE+07
SGALP	1	1	2	1.0000E-03	--	1.5000CE+07
SGG	1	1	100	1.0000E-03	--	1.5000CE+07
SGI	1	1	2	1.0000E-03	--	1.5000CE+07
SGN	1	1	77	1.0000E-03	--	1.5000CE+07
SGP	1	1	2	1.0000E-03	--	1.5000CE+07
SGT	1	1	76	1.0000E-03	--	1.5000CE+07
SGTR	1	1	81	1.0000E-03	--	1.5000CE+07
SGX	1	1	100	1.0000E-03	--	1.5000CE+07
SG2N	1	1	2	1.0000E-03	--	1.5000CE+07
SGNC	1	1	FOR	19 ENERGIES BETWEEN	5.000000E+04 EV AND	1.6000C0E+07 EV

****
*   *
* H O1 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	90	--	--	--
MUEL	1	1	26	1.0000E-03	--	1.5000CE+07
SGA	1	1	100	1.0000E-03	--	1.5000CE+07
SGALP	1	1	2	1.0000E-03	--	1.5000CE+07
SGG	1	1	100	1.0000E-03	--	1.5000CE+07
SGI	1	1	2	1.0000E-03	--	1.5000CE+07
SGN	1	1	54	1.0000E-03	--	1.5000CE+07
SGP	1	1	2	1.0000E-03	--	1.5000CE+07
SGT	1	1	55	1.0000E-03	--	1.5000CE+07
SGTR	1	1	66	1.0000E-03	--	1.5000CE+07
SGX	1	1	100	1.0000E-03	--	1.5000CE+07
SG2N	1	1	2	1.0000E-03	--	1.5000CE+07
SGNC	1	1	FOR	19 ENERGIES BETWEEN	5.000000E+04 EV AND	1.6000C0E+07 EV

+ lowest energy for which nonzero sigma value is stored on KEDAK

Table 2 cont.

****
*   *
* H 2   *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	54	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	23	1.0000E-03	--	1.5000CE+07
SGA	1	1	151	1.0000E-03	--	1.5000CE+07
SGALP	1	1	2	1.0000E-03	--	1.5000CE+07
SGG	1	1	151	1.0000E-03	--	1.5000CE+07
SGI	1	1	2	1.0000E-03	--	1.5000CE+07
SGN	1	1	28	1.0000E-03	--	1.5000CE+07
SGP	1	1	2	1.0000E-03	--	1.5000CE+07
SGT	1	1	27	1.0000E-03	--	1.5000CE+07
SGTR	1	1	39	1.0000E-03	--	1.5000CE+07
SGX	1	1	141	1.0000E-03	--	1.5000CE+07
SG2N	1	1	31	1.0000E-03	3.40000E+06	1.5000CE+07
SGNC	1	1	FOR	14 ENERGIES BETWEEN	5.000000E+04 EV AND	1.4100C0E+07 EV

****
*   *
* HE 3 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	18	--	--	--
MUEL	1	1	2	1.0000E-03	--	1.0000CE+07
SGA	1	1	77	1.0000E-03	--	1.0000CE+07
SGALP	1	1	2	1.0000E-03	--	1.0000CE+07
SGG	1	1	2	1.0000E-03	--	1.0000CE+07
SGI	1	1	2	1.0000E-03	--	1.0000CE+07
SGN	1	1	2	1.0000E-03	--	1.0000CE+07
SGP	1	1	77	1.0000E-03	--	1.0000CE+07
SGT	1	1	2	1.0000E-03	--	1.0000CE+07
SGX	1	1	2	1.0000E-03	--	1.0000CE+07
SG2N	1	1	2	1.0000E-03	--	1.0000CE+07

****
*   *
* HE 4 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	18	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	41	1.0000E-03	--	1.0000CE+07
SGA	1	1	2	1.0000E-03	--	1.0000CE+07
SGALP	1	1	2	1.0000E-03	--	1.0000CE+07
SGG	1	1	2	1.0000E-03	--	1.0000CE+07
SGI	1	1	2	1.0000E-03	--	1.0000CE+07
SGN	1	1	59	1.0000E-03	--	1.0000CE+07
SGP	1	1	2	1.0000E-03	--	1.0000CE+07
SGT	1	1	59	1.0000E-03	--	1.0000CE+07
SGTR	1	1	58	1.0000E-03	--	1.0000CE+07
SGX	1	1	2	1.0000E-03	--	1.0000CE+07
SG2N	1	1	2	1.0000E-03	--	1.0000CE+07
SGNC	1	1	FOR	26 ENERGIES BETWEEN	1.000000E+05 EV AND	1.4700C0E+07 EV

Table 2 cont.

****
*   *
* C 12 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	90	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	156	1.0000E-03	--	1.50000E+07
RANGRES	0	4	1	--	--	--
RES	3	8	14	2.0760E+06	--	1.20800E+07
SGA	1	1	204	1.0000E-03	--	1.50000E+07
SGALP	1	1	58	1.0000E-03	7.20000E+06	1.50000E+07
SGG	1	1	155	1.0000E-03	--	1.50000E+07
SGI	1	1	122	1.0000E-03	4.75000E+06	1.50000E+07
SGI3A	1	1	27	1.0000E-03	9.00000E+06	1.50000E+07
SGN	1	1	233	1.0000E-03	--	1.50000E+07
SGP	1	1	3	1.0000E-03	1.50000E+07	1.50000E+07
SGT	1	1	219	1.0000E-03	--	1.50000E+07
SGTR	1	1	242	1.0000E-03	--	1.50000E+07
SGX	1	1	270	1.0000E-03	--	1.50000E+07
SG2N	1	1	2	1.0000E-03	--	1.50000E+07
SGNC	1	1	FOR 42 ENERGIES BETWEEN		5.000000E+04 EV AND	1.42000E+07 EV
SGTZ	1	1	FOR 5 EXCITED LEVELS			

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
4.43000E+06	120	1.0000E-03	4.75000E+06	1.50000E+07
7.65000E+06	26	1.0000E-03	9.00000E+06	1.50000E+07
9.66000E+06	12	1.0000E-03	1.08000E+07	1.50000E+07
1.08400E+07	6	1.0000E-03	1.20000E+07	1.50000E+07
1.18200E+07	4	1.0000E-03	1.30000E+07	1.50000E+07

****
*   *
* N   *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	18	--	--	--
SGNC	1	1	FOR 41 ENERGIES BETWEEN		1.000000E+05 EV AND	1.58300E+07 EV

Table 2 cont.

```
**********
*        *
* 0  16  *
*        *
**********
```

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	45	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	275	1.0000E-03	--	1.5000CE+07
RANGRES	0	4	1	--	--	--
RES	3	8	39	4.4200E+05	--	1.1300CE+07
SGA	1	1	388	1.0000E-03	--	1.5000CE+07
SGALP	1	1	219	1.0000E-03	3.65000E+06	1.5000CE+07
SGD	1	1	14	1.0000E-03	1.10000E+07	1.5000CE+07
SGG	1	1	166	1.0000E-03	--	1.5000CE+07
SGI	1	1	130	1.0000E-03	6.50000E+06	1.5000CE+07
SGN	1	1	407	1.0000E-03	--	1.5000CE+07
SGP	1	1	32	1.0000E-03	1.04000E+07	1.5000CE+07
SGT	1	1	488	1.0000E-03	--	1.5000CE+07
SGTR	1	1	495	1.0000E-03	--	1.5000CE+07
SGX	1	1	460	1.0000E-03	--	1.5000CE+07
SG2N	1	1	2	1.0000E-03	--	1.5000CE+07
SGNC	1	1	FOR 131 ENERGIES BETWEEN 1.000000E+05 EV AND 1.5830C0E+07 EV			
SGIZ	1	1	FOR 24 EXCITED LEVELS			

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
6.0520CE+06	167	1.0000E-03	6.5000CE+06	1.5000CE+07
6.1310CE+06	150	1.0000E-03	6.5400CE+06	1.5000CE+07
6.9170CE+06	113	1.0000E-03	7.4000CE+06	1.5000CE+07
7.1190CE+06	97	1.0000E-03	7.6000CE+06	1.5000CE+07
8.8720CE+06	41	1.0000E-03	9.5000CE+06	1.5000CE+07
9.5970CE+06	33	1.0000E-03	1.1000CE+07	1.5000CE+07
9.8470CE+06	33	1.0000E-03	1.1000CE+07	1.5000CE+07
1.0354CE+07	27	1.0000E-03	1.2000CE+07	1.5000CE+07
1.0952CE+07	35	1.0000E-03	1.1796CE+07	1.5000CE+07
1.1080CE+07	34	1.0000E-03	1.1796CE+07	1.5000CE+07
1.1096CE+07	34	1.0000E-03	1.2000CE+07	1.5000CE+07
1.1260CE+07	29	1.0000E-03	1.2100CE+07	1.5000CE+07
1.1440CE+07	30	1.0000E-03	1.2248CE+07	1.5000CE+07
1.1521CE+07	29	1.0000E-03	1.2400CE+07	1.5000CE+07
1.1630CE+07	30	1.0000E-03	1.2400CE+07	1.5000CE+07
1.2053CE+07	25	1.0000E-03	1.3000CE+07	1.5000CE+07
1.2442CE+07	20	1.0000E-03	1.3400CE+07	1.5000CE+07
1.2528CE+07	23	1.0000E-03	1.3400CE+07	1.5000CE+07
1.2795CE+07	14	1.0000E-03	1.3785CE+07	1.5000CE+07
1.2967CE+07	15	1.0000E-03	1.4000CE+07	1.5000CE+07
1.3150CE+07	15	1.0000E-03	1.4000CE+07	1.5000CE+07
1.3450CE+07	11	1.0000E-03	1.4400CE+07	1.5000CE+07
1.3750CE+07	7	1.0000E-03	1.4700CE+07	1.5000CE+07
1.4050CE+07	3	1.0000E-03	1.5000CE+07	1.5000CE+07

Table 2 cont.

****
* *
* NA 23 *
* *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	180	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	118	1.0000E-03	--	1.500CCE+07
RANGRES	0	4	1	--	--	--
RES	3	8	233	2.8500E+03	--	8.575CCE+05
SGA	1	1	719	1.0000E-03	--	1.500CCE+07
SGALP	1	1	167	1.0000E-03	5.74000E+06	1.500CCE+07
SGG	1	1	516	1.0000E-03	--	1.500CCE+07
SGI	1	1	246	1.0000E-03	4.70000E+05	1.500CCE+07
SGN	1	1	839	1.0000E-03	--	1.500CCE+07
SGP	1	1	222	1.0000E-03	4.00000E+06	1.500CCE+07
SGT	1	1	853	1.0000E-03	--	1.500CCE+07
SGTR	1	1	863	1.0000E-03	--	1.500CCE+07
SGX	1	1	828	1.0000E-03	--	1.500CCE+07
SG2N	1	1	12	1.0000E-03	1.32000E+07	1.500CCE+07
ST	2	6	2	0.0	--	0.0
STD	0	3	1	--	--	--
SGNC	1	1	FOR 63 ENERGIES BETWEEN 1.000000E+04 EV AND 1.430CCOE+C7 EV			
SGIZ	1	1	FOR 7 EXCITED LEVELS			

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
4.390C0E+05	220	1.000CE-03	4.70000E+05	4.00000E+06
2.07800E+06	120	1.0000E-03	2.18000E+06	4.00000E+06
2.39300E+06	98	1.0000E-03	2.52000E+06	4.0000CE+06
2.64100E+06	68	1.0000E-03	2.81000E+06	4.00000E+06
2.70500E+06	98	1.000CE-03	2.83000E+06	4.00000E+06
2.9E300E+06	50	1.0000E-03	3.12000E+06	4.00000E+06
3.68000E+06	25	1.0000E-03	3.85000E+06	4.00000E+06

****
* *
* AL 27 *
* *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	81	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	210	6.0000E-04	--	1.500CCE+07
RANGRES	0	4	1	--	--	--
RES	3	8	62	5.9060E+03	--	4.450CCE+05
SGA	1	1	340	6.0000E-04	--	1.500CCE+07
SGALP	1	1	59	6.0000E-04	6.20000E+06	1.500CCE+07
SGG	1	1	280	6.0000E-04	--	1.500CCE+07
SGI	1	1	75	6.C000E-04	1.07000E+06	1.500CCE+07
SGN	1	1	339	6.0000E-04	--	1.500CCE+07
SGP	1	1	100	6.0000E-04	2.74000E+06	1.500C0E+07
SGT	1	1	342	6.0000E-04	--	1.500CCE+07
SGTR	1	1	354	6.0000E-04	--	1.500CCE+07
SGX	1	1	313	6.0000E-04	--	1.500CCE+07
SG2N	1	1	4	6.0000E-04	1.40000E+07	1.500CCE+07
ST	2	6	2	0.0	--	0.0
STD	0	3	1	--	--	--
SGNC	1	1	FOR 36 ENERGIES BETWEEN 1.000000E+04 EV AND 1.4300C0E+C7 EV			
SGIZ	1	1	FOR 9 EXCITED LEVELS			

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
8.42000E+05	66	1.0000E-03	1.07000E+06	4.5000CE+06
1.01300E+06	70	1.0000E-03	1.07000E+06	4.50000E+06
2.21000E+06	35	1.000CE-03	2.40000E+06	4.50000E+06
2.73000E+06	28	1.0000E-03	3.00000E+06	4.50000E+06
2.98000E+06	32	1.0000E-03	3.20000E+06	4.5000CE+06
3.00000E+06	24	1.0000E-03	3.20000E+06	4.5000CE+06
3.68000E+06	19	1.0000E-03	4.20000E+06	4.5000CE+06
3.95000E+06	12	1.000CE-03	4.20000E+06	4.50000E+06
4.05000E+06	11	1.0000E-03	4.40000E+06	4.50000E+06

Table 2 cont.

****
* CL *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	9	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
ISOT3	1	1	2	3.5000E+01	--	3.70000E+01
MUEL	1	1	103	1.0000E-03	--	1.50000E+07
RANGRES	0	4	1	--	--	--
RES	3	8	27	-2.1000E+02	--	2.02000E+05
SGA	1	1	348	1.9000E-02	--	1.50000E+07
SGALP	1	1	40	1.9000E-02	2.00000E+06	1.50000E+07
SGG	1	1	350	1.9000E-02	--	1.50000E+07
SGI	1	1	50	1.9000E-02	1.04200E+06	1.50000E+07
SGN	1	1	285	1.9000E-02	--	1.50000E+07
SGP	1	1	295	1.9000E-02	--	1.50000E+07
SGT	1	1	265	1.9000E-02	--	1.50000E+07
SGTR	1	1	275	1.9000E-02	--	1.50000E+07
SGX	1	1	342	1.9000E-02	--	1.50000E+07
SG2N	1	1	7	1.9000E-02	1.27000E+07	1.50000E+07

****
* CL 35 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--

****
* CL 37 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--

Table 2 cont.

```
************
*          *
* CR       *
*          *
************
```

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	81	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
ISOT3	1	1	4	5.0000E+01	--	5.4000CE+01
MUEL	1	1	179	1.0000E-03	--	1.500CCE+07
RANGRES	0	4	1	--	--	--
RES	3	8	67	4.25C0E+03	--	6.360CCE+05
SGA	1	1	188	1.0000E-03	--	1.5000CE+07
SGALP	1	1	55	1.0000E-03	3.99000E+06	1.5000CE+07
SGG	1	1	189	1.0000E-03	--	1.500CCE+07
SGI	1	1	168	1.0000E-03	5.79000E+05	1.500CCE+07
SGN	1	1	493	1.0000E-03	--	1.500CCE+07
SGP	1	1	59	1.0000E-03	2.20000E+06	1.500CCE+07
SGT	1	1	530	1.0000E-03	--	1.500CCE+07
SGTR	1	1	516	1.0000E-03	--	1.500CCE+07
SGX	1	1	267	1.0000E-03	--	1.500CCE+07
SG2N	1	1	37	1.0000E-03	8.12000E+06	1.500CCE+07
SGNC	1	1	FOR 45 ENERGIES BETWEEN	1.000000E+04 EV AND		1.4500C0E+07 EV
SGIZ	1	1	FOR 8 EXCITED LEVELS			

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
5.65CC0E+05	114	1.000CE-03	5.79000E+05	3.19000E+06
7.82000E+05	89	1.0000E-03	8.00000E+05	3.19000E+06
1.0C700E+06	76	1.0000E-03	1.03000E+06	3.19000E+06
1.43400E+06	20	1.0000E-03	1.45000E+06	3.19000E+06
1.83500E+06	39	1.0000E-03	2.00000E+06	3.19000E+06
2.327C0E+06	32	1.0000E-03	2.40000E+06	3.19000E+06
2.62000E+06	23	1.0000E-03	2.68100E+06	3.19000E+06
2.96500E+06	15	1.0000E-03	3.02800E+06	3.19000E+06

```
************
*          *
* CR 50    *
*          *
************
```

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	5	6.6000E+03	--	9.500C0E+04
SGALP	1	1	58	1.0000E-03	3.99000E+06	1.500CCE+07
SGP	1	1	34	1.0000E-03	2.20000E+06	1.500C0E+07
SG2N	1	1	9	1.0000E-03	1.35000E+07	1.500CCE+07
ST	2	6	1	0.0	--	1.C00CCE+0C
STD	0	3	1	--	--	--

Table 2 cont.

****
*   *
* CR 52 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	58	5.1000E+04	--	6.36000E+05
SGALP	1	1	48	1.0000E-03	5.03000E+06	1.50000E+07
SGP	1	1	68	1.0000E-03	5.03000E+06	1.50000E+07
SG2N	1	1	12	1.0000E-03	1.25000E+07	1.50000E+07
ST	2	6	1	0.0	--	1.00000E+00
STD	0	3	1	--	--	--

****
*   *
* CR 53 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	1	4.2500E+03	--	0.0
SGALP	1	1	27	1.0000E-03	4.02000E+06	1.50000E+07
SGP	1	1	52	1.0000E-03	4.02000E+06	1.50000E+07
SG2N	1	1	32	1.0000E-03	8.12000E+06	1.50000E+07
ST	2	6	2	0.0	--	0.0
STD	0	3	1	--	--	--

****
*   *
* CR 54 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	3	2.3500E+04	--	1.19000E+05
SGALP	1	1	36	1.0000E-03	7.02000E+06	1.50000E+07
SGP	1	1	22	1.0000E-03	1.02500E+07	1.50000E+07
SG2N	1	1	21	1.0000E-03	9.98000E+06	1.50000E+07
ST	2	6	1	0.0	--	1.00000E+00
STD	0	3	1	--	--	--

Table 2 cont.

****
*   *
* FE   *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	54	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
ISOT3	1	1	4	5.4000E+01	--	5.8000E+01
MUEL	1	1	558	1.0000E-03	--	1.5000E+07
RANGRES	0	4	1	--	--	--
RES	3	8	96	-4.3900E+03	--	6.4500E+05
SGA	1	1	464	1.0000E-03	--	1.5000E+07
SGALP	1	1	69	1.0000E-03	4.06000E+06	1.5000E+07
SGG	1	1	421	1.0000E-03	--	1.5000E+07
SGI	1	1	249	1.0000E-03	8.63200E+05	1.5000E+07
SGN	1	1	1025	1.0000E-03	--	1.5000E+07
SGP	1	1	125	1.0000E-03	5.28600E+05	1.5000E+07
SGT	1	1	1039	1.0000E-03	--	1.5000E+07
SGTR	1	1	1044	1.0000E-03	--	1.5000E+07
SGX	1	1	564	1.0000E-03	--	1.5000E+07
SG2N	1	1	37	1.0000E-03	7.96000E+06	1.5000E+07
SGNC	1	1	FOR	45 ENERGIES BETWEEN	1.000000E+04 EV AND	1.4500E+07 EV
SGIZ	1	1	FOR	10 EXCITED LEVELS		

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
8.4500E+05	232	1.0000E-03	8.63200E+05	4.99000E+06
1.4080E+06	110	1.0000E-03	1.44470E+06	4.99000E+06
2.0800E+06	83	1.0000E-03	2.14000E+06	4.99000E+06
2.6550E+06	55	1.0000E-03	2.71000E+06	4.99000E+06
2.9360E+06	43	1.0000E-03	2.96000E+06	4.99000E+06
3.1180E+06	37	1.0000E-03	3.19000E+06	4.99000E+06
3.3670E+06	30	1.0000E-03	3.45000E+06	4.99000E+06
3.5590E+06	28	1.0000E-03	3.68000E+06	4.99000E+06
3.8250E+06	25	1.0000E-03	3.91000E+06	4.99000E+06
4.0380E+06	21	1.0000E-03	4.14000E+06	4.99000E+06

****
*   *
* FE 54 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	44	8.0000E+03	--	5.0650E+05
SGALP	1	1	39	1.0000E-03	4.06000E+06	1.5000E+07
SGP	1	1	111	1.0000E-03	5.28600E+05	1.5000E+07
SG2N	1	1	7	1.0000E-03	1.40000E+07	1.5000E+07
ST	2	6	1	0.0	--	1.0000E+00
STD	0	3	1	--	--	--

Table 2 cont.

****
*   *
* FE 56 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	50	-4.3900E+03	--	6.45000E+05
SGALP	1	1	53	1.0000E-03	5.04000E+06	1.50000E+07
SGP	1	1	70	1.0000E-03	4.5500CE+06	1.50000E+07
SG2N	1	1	14	1.0000E-03	1.17500E+07	1.50000E+07
ST	2	6	1	0.0	--	1.00000E+00
STD	0	3	1	--	--	--

****
*   *
* FE 57 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	2	3.9000E+03	--	6.00000E+03
SGALP	1	1	62	1.0000E-03	5.04000E+06	1.50000E+07
SGP	1	1	34	1.0000E-03	4.06000E+06	1.50000E+07
SG2N	1	1	33	1.0000E-03	7.96000E+06	1.50000E+07
ST	2	6	2	0.0	--	0.0
STD	0	3	1	--	--	--

****
*   *
* FE 58 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
SGALP	1	1	28	1.0000E-03	7.04000E+06	1.50000E+07
SGP	1	1	40	1.0000E-03	4.06000E+06	1.50000E+07
STD	0	3	1	--	--	--

Table 2 cont.

****
*   *
* NI   *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	81	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
ISOT3	1	1	5	5.8000E+01	--	6.4000E+01
MUEL	1	1	302	1.0000E-03	--	1.5000E+07
RANGRES	0	4	1	--	--	--
RES	3	8	19	-2.8500E+04	--	2.0650E+05
SGA	1	1	575	1.0000E-03	--	1.5000E+07
SGALP	1	1	57	1.0000E-03	2.08000E+06	1.5000E+07
SGG	1	1	512	1.0000E-03	--	1.5000E+07
SGI	1	1	76	1.0000E-03	1.40000E+06	1.5000E+07
SGN	1	1	896	1.0000E-03	--	1.5000E+07
SGP	1	1	141	1.0000E-03	7.92000E+05	1.5000E+07
SGT	1	1	919	1.0000E-03	--	1.5000E+07
SGTR	1	1	912	1.0000E-03	--	1.5000E+07
SGX	1	1	548	1.0000E-03	--	1.5000E+07
SG2N	1	1	25	1.0000E-03	8.02300E+06	1.5000E+07
SGNC	1	1	FOR 46 ENERGIES BETWEEN 1.000000E+04 EV AND 1.4000E+07 EV			
SGIZ	1	1	FOR 12 EXCITED LEVELS			

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
1.33200E+06	55	1.0000E-03	1.40000E+06	3.99300E+06
1.45200E+06	39	1.0000E-03	1.50000E+06	3.99300E+06
2.15800E+06	54	1.0000E-03	2.25000E+06	3.99300E+06
2.28700E+06	42	1.0000E-03	2.45000E+06	3.99300E+06
2.45800E+06	55	1.0000E-03	2.51200E+06	3.99300E+06
2.50200E+06	63	1.0000E-03	2.56400E+06	3.99300E+06
2.63000E+06	41	1.0000E-03	2.69000E+06	3.99300E+06
2.77200E+06	46	1.0000E-03	2.82500E+06	3.99300E+06
3.03500E+06	43	1.0000E-03	3.09500E+06	3.99300E+06
3.13000E+06	34	1.0000E-03	3.20400E+06	3.99300E+06
3.26000E+06	30	1.0000E-03	3.33700E+06	3.99300E+06
3.52000E+06	30	1.0000E-03	3.61000E+06	3.99300E+06

****
*   *
* NI 58 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	9	-2.8500E+04	--	2.0650E+05
SGALP	1	1	56	1.0000E-03	2.08000E+06	1.5000E+07
SGP	1	1	143	1.0000E-03	7.92000E+05	1.5000E+07
SG2N	1	1	12	1.0000E-03	1.27500E+07	1.5000E+07
ST	2	6	1	0.0	--	1.0000E+00
STD	0	3	1	--	--	--

Table 2 cont.

****
* NI 60 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	9	1.2500E+04	--	1.99000E+05
SGALP	1	1	38	1.0000E-03	4.15400E+06	1.50000E+07
SGP	1	1	73	1.0000E-03	4.00300E+06	1.50000E+07
SG2N	1	1	12	1.0000E-03	1.17500E+07	1.50000E+07
ST	2	6	1	0.0	--	1.00000E+00
STD	0	3	1	--	--	--

****
* NI 61 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
SGALP	1	1	37	1.0000E-03	6.02100E+06	1.50000E+07
SGP	1	1	71	1.0000E-03	4.05100E+06	1.50000E+07
SG2N	1	1	27	1.0000E-03	8.02300E+06	1.50000E+07
STD	0	3	1	--	--	--

****
* NI 62 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	1	4.6000E+03	--	0.0
SGALP	1	1	42	1.0000E-03	8.02300E+06	1.50000E+07
SGP	1	1	66	1.0000E-03	6.07100E+06	1.50000E+07
SG2N	1	1	18	1.0000E-03	1.10000E+07	1.50000E+07
STD	0	3	1	--	--	--

****
* NI 64 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
SGALP	1	1	12	1.0000E-03	1.27500E+07	1.50000E+07
SGP	1	1	14	1.0000E-03	1.22500E+07	1.50000E+07
SG2N	1	1	21	1.0000E-03	9.95400E+06	1.50000E+07
STD	0	3	1	--	--	--

Table 2 cont.

****
* *
* MO *
* *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	63	--	--	--
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
ISOT3	1	1	7	9.2000E+01	--	1.00000E+02
MUEL	1	1	139	1.0000E-03	--	1.50000E+07
RANGRES	0	4	1	--	--	--
RES	3	8	51	1.2000E+01	--	1.66600E+04
SGA	1	1	1356	1.0000E-03	--	1.50000E+07
SGALP	1	1	64	1.0000E-03	4.83300E+06	1.50000E+07
SGG	1	1	1390	1.0000E-03	--	1.50000E+07
SGI	1	1	108	1.0000E-03	2.20000E+05	1.50000E+07
SGN	1	1	1378	1.0000E-03	--	1.50000E+07
SGP	1	1	54	1.0000E-03	1.55000E+06	1.50000E+07
SGT	1	1	1585	1.0000E-03	--	1.50000E+07
SGTR	1	1	1582	1.0000E-03	--	1.50000E+07
SGX	1	1	1338	1.0000E-03	--	1.50000E+07
SG2N	1	1	38	1.0000E-03	7.05400E+06	1.50000E+07
SGNC	1	1	FOR	39 ENERGIES BETWEEN	1.000000E+04 EV AND	1.40900E+07 EV
SGIZ	1	1	FOR	8 EXCITED LEVELS		

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
2.03000E+05	66	1.0000E-03	2.20000E+05	2.06000E+06
5.30000E+05	49	1.0000E-03	5.40000E+05	2.06000E+06
7.80000E+05	34	1.0000E-03	7.95000E+05	2.06000E+06
9.30000E+05	25	1.0000E-03	9.55000E+05	2.06000E+06
1.10000E+06	17	1.0000E-03	1.12000E+06	2.06000E+06
1.26000E+06	12	1.0000E-03	1.30000E+06	2.06000E+06
1.50000E+06	8	1.0000E-03	1.55000E+06	2.06000E+06
1.86000E+06	5	1.0000E-03	1.90000E+06	2.06000E+06

****
* *
* MO 92 *
* *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	5	3.4680E+02	--	1.66600E+04
SGALP	1	1	37	1.0000E-03	7.85200E+06	1.50000E+07
SGP	1	1	44	1.0000E-03	1.55000E+06	1.50000E+07
SG2N	1	1	10	1.0000E-03	1.30000E+07	1.50000E+07
ST	2	6	1	0.0	--	1.00000E+00
STD	0	3	1	--	--	--

****
* *
* MO 94 *
* *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	3	1.5190E+03	--	5.38000E+03
SGALP	1	1	55	1.0000E-03	6.00200E+06	1.50000E+07
SGP	1	1	47	1.0000E-03	7.51100E+06	1.50000E+07
SG2N	1	1	30	1.0000E-03	9.85200E+06	1.50000E+07
ST	2	6	1	0.0	--	1.00000E+00
STD	0	3	1	--	--	--

Table 2 cont.

****
* MO 95 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	14	4.5100E+01	--	7.40000E+03
SGALP	1	1	35	1.0000E-03	4.8330CE+06	1.50000E+07
SGP	1	1	45	1.0000E-03	6.00200E+06	1.50000E+07
SG2N	1	1	41	1.0000E-03	7.2430CE+06	1.500C0E+07
ST	2	6	2	0.0	--	0.0
STD	0	3	1	--	--	--

****
* MO 96 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	4	1.1350E+02	--	3.300C0E+03
SGALP	1	1	44	1.0000E-03	6.5230CE+06	1.50000E+07
SGP	1	1	49	1.0000E-03	7.51100E+06	1.5C0C0E+07
SG2N	1	1	31	1.0CC0E-03	9.26300E+06	1.50000E+07
ST	2	6	1	0.0	--	1.00000E+00
STD	0	3	1	--	--	--

****
* MO 97 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	10	7.0900E+01	--	1.25500E+03
SGALP	1	1	53	1.0000E-03	6.20100E+06	1.50000E+07
SGP	1	1	47	1.0000E-03	8.00600E+06	1.5000CE+07
SG2N	1	1	25	1.0000E-03	7.05400E+06	1.50000E+07
ST	2	6	2	0.0	--	0.0
STD	0	3	1	--	--	--

****
* MO 98 *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	9	1.2000E+01	--	9.00000E+03
SGALP	1	1	27	1.0000E-03	8.00600E+06	1.50000E+07
SGP	1	1	19	1.0000E-03	1.06000E+07	1.50000E+07
SG2N	1	1	29	1.0000E-03	8.48200E+06	1.50000E+07
ST	2	6	1	0.0	--	1.00000E+00
STD	0	3	1	--	--	--

Table 2 cont.

****
*   *
* MO100 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	6	9.7700E+01	--	1.936CCE+03
SGALP	1	1	39	1.0000E-03	8.56800E+06	1.500CCE+07
SGP	1	1	20	1.0000E-03	1.12000E+07	1.5CCCCE+07
SG2N	1	1	28	1.0000E-03	8.48200E+06	1.500CCE+07
ST	2	6	1	0.0	--	1.000CCE+0C
STD	0	3	1	--	--	--

****
*   *
* CD   *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	36	--	--	--
ISOT1	0	3	1	--	--	--
ISOT3	1	1	8	1.0600E+02	--	1.160CCE+02
MUEL	1	1	46	1.0000E-03	--	1.500CCE+07
RANGRES	0	4	1	--	--	--
RES	3	8	60	1.7800E-01	--	1.125CCE+03
SGA	1	1	4160	1.0000E-03	--	1.500CCE+07
SGALP	1	1	11	1.0000E-03	7.00000E+06	1.500CCE+07
SGG	1	1	4150	1.0000E-03	--	1.500CCE+07
SGI	1	1	44	1.0000E-03	3.50000E+05	1.500CCE+07
SGN	1	1	3175	1.0000E-03	--	1.500CCE+07
SGP	1	1	19	1.0000E-03	4.00000E+06	1.500CCE+07
SGT	1	1	3673	1.0000E-03	--	1.500CCE+07
SGTR	1	1	3690	1.0000E-03	--	1.500CCE+07
SGX	1	1	4145	1.0000E-03	--	1.500CCE+07
SG2N	1	1	17	1.0000E-03	8.00000E+06	1.500CCE+07
SGIZ	1	1	FOR 4 EXCITED LEVELS			

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
3.00000E+05	19	1.0000E-03	3.50000E+05	1.40000E+06
6.00000E+05	13	1.0000E-03	6.50000E+05	1.40000E+06
1.20000E+06	4	1.0000E-03	1.30000E+06	1.40000E+06
1.30000E+06	3	1.0000E-03	1.40000E+06	1.40000E+06

Table 2 cont.

****
*   *
* U 235 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	234	--	--	--
ALPHA	1	1	5248	1.0000E-03	--	1.500CCE+07
CHICR	1	3	1	0.0	--	2.290CCE-06
CHIF	1	1	219	1.0000E-03	--	1.000CCE+07
ETA	1	1	5335	1.0000E-03	--	1.500CCE+07
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	52	1.0000E-03	--	1.500CCE+07
NUE	1	1	16	1.0000E-03	--	1.500CCE+07
PLNUE	0	4	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	197	-9.5000E-01	--	1.47330E+02
SGA	1	1	8432	1.0000E-03	--	1.500CCE+07
SGALP	1	1	2	1.0000E-03	--	1.500CCE+07
SGF	1	1	8274	1.0000E-03	--	1.500CCE+07
SGG	1	1	8381	1.0000E-03	--	1.500CCE+07
SGI	1	1	131	1.0000E-03	2.09999E+04	1.500CCE+07
SGN	1	1	8096	1.0000E-03	--	1.500CCE+07
SGP	1	1	2	1.0000E-03	--	1.500CCE+07
SGT	1	1	9543	1.0000E-03	--	1.500CCE+07
SGTR	1	1	9567	1.0000E-03	--	1.500CCE+07
SGX	1	1	8428	1.0000E-03	--	1.500CCE+07
SG2N	1	1	60	1.0000E-03	5.40000E+06	1.500CCE+07
SG3N	1	1	21	1.0000E-03	1.26000E+07	1.500CCE+07
ST	2	6	6	0.0	--	1.000CCE+0C
STD	0	3	1	--	--	--
STGF	3	8	66	5.0000E+01	--	2.500CCE+05
SGNC	1	1	FCR	43 ENERGIES BETWEEN	1.000000E+04 EV AND	1.520CC0E+C7 EV
SGIZ	1	1	FCR	10 EXCITED LEVELS		

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
1.00000E+04	65	1.0000E-03	2.09999E+04	2.4000CE+06
6.00000E+04	61	1.0000E-03	8.50000E+04	2.4000CE+06
9.000C0E+04	57	1.0000E-03	1.20000E+05	2.40000E+06
2.00000E+05	43	1.0000E-03	2.40000E+05	2.40000E+06
3.00000E+05	46	1.000CE-03	3.40000E+05	2.40000E+06
5.0C000E+05	38	1.0000E-03	5.20000E+05	2.40000E+06
1.00000E+06	16	1.000CE-03	1.10000E+06	2.40000E+06
1.5C000E+06	12	1.0000E-03	1.60000E+06	2.40000E+06
1.75000E+06	10	1.0000E-03	1.80000E+06	2.40000E+06
2.00000E+06	7	1.0000E-03	2.10000E+06	2.4000CE+06

Table 2 cont.

****
*   *
* U 238 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	50	--	--	--
CHICR	1	3	1	0.0	--	2.29000E-06
CHIF	1	1	206	1.0000E-03	--	1.00000E+07
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	55	1.0000E-03	--	1.50000E+07
NUE	1	1	8	1.0000E-03	--	1.50000E+07
PLNUE	0	4	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	318	4.3930E+00	--	4.59270E+03
SGA	1	1	4395	1.0000E-03	--	1.50000E+07
SGALP	1	1	2	1.0000E-03	--	1.50000E+07
SGF	1	1	112	1.0000E-03	5.00000E+05	1.50000E+07
SGG	1	1	4385	1.0000E-03	--	1.50000E+07
SGI	1	1	95	1.0000E-03	4.70000E+04	1.50000E+07
SGIZC	1	1	60	1.0000E-03	2.30000E+06	1.50000E+07
SGN	1	1	6545	1.0000E-03	--	1.50000E+07
SGP	1	1	2	1.0000E-03	--	1.50000E+07
SGT	1	1	6704	1.0000E-03	--	1.50000E+07
SGTR	1	1	6727	1.0000E-03	--	1.50000E+07
SGX	1	1	4348	1.0000E-03	--	1.50000E+07
SG2N	1	1	32	1.0000E-03	6.10000E+06	1.50000E+07
SG3N	1	1	15	1.0000E-03	1.16000E+07	1.50000E+07
ST	2	6	5	0.0	--	2.00000E+00
STD	0	3	1	--	--	--
SGNC	1	1	FOR	42 ENERGIES BETWEEN	1.000000E+04 EV AND	1.40000E+07 EV
SGIZ	1	1	FOR	26 EXCITED LEVELS		

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
4.50000E+04	49	1.0000E-03	4.70000E+04	4.50000E+06
1.46000E+05	17	1.0000E-03	1.80000E+05	3.80000E+06
3.08000E+05	8	1.0000E-03	4.08000E+05	3.80000E+06
6.80000E+05	20	1.0000E-03	7.00000E+05	3.80000E+06
7.32000E+05	17	1.0000E-03	8.00000E+05	3.80000E+06
8.27000E+05	14	1.0000E-03	9.00000E+05	3.80000E+06
9.30000E+05	18	1.0000E-03	9.50000E+05	3.80000E+06
9.67000E+05	17	1.0000E-03	1.00000E+06	3.80000E+06
1.00000E+06	17	1.0000E-03	1.10000E+06	3.80000E+06
1.04100E+06	20	1.0000E-03	1.10000E+06	3.80000E+06
1.06000E+06	21	1.0000E-03	1.10000E+06	3.80000E+06
1.12000E+06	18	1.0000E-03	1.20000E+06	3.80000E+06
1.16000E+06	11	1.0000E-03	1.20000E+06	3.80000E+06
1.22000E+06	12	1.0000E-03	1.30000E+06	3.80000E+06
1.27000E+06	11	1.0000E-03	1.30000E+06	3.80000E+06
1.30000E+06	10	1.0000E-03	1.40000E+06	3.80000E+06
1.36100E+06	10	1.0000E-03	1.40000E+06	3.80000E+06
1.40900E+06	9	1.0000E-03	1.50000E+06	3.80000E+06
1.43700E+06	10	1.0000E-03	1.50000E+06	3.80000E+06
1.47000E+06	12	1.0000E-03	1.50000E+06	3.80000E+06
1.62500E+06	14	1.0000E-03	1.65000E+06	4.50000E+06
1.87500E+06	12	1.0000E-03	1.90000E+06	4.50000E+06
1.95000E+06	28	1.0000E-03	2.50000E+06	1.50000E+07
2.95000E+06	23	1.0000E-03	3.50000E+06	1.50000E+07
3.95000E+06	20	1.0000E-03	4.50000E+06	1.50000E+07
4.95000E+06	18	1.0000E-03	5.50000E+06	1.50000E+07

Table 2 cont.

****
*   *
* PU238 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	27	--	--	--
ALPHA	1	1	1091	1.0000E-03	--	1.500CCE+07
CHICR	1	3	2	1.0000E-03	--	1.50000E+07
ETA	1	1	992	1.0000E-03	--	1.500CCE+07
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	70	1.0000E-03	--	1.500CCE+07
NUE	1	1	2	1.0000E-03	--	1.500CCE+07
PLNUE	0	4	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	52	-4.0000E-01	--	4.960CCE+02
SGA	1	1	2222	1.0000E-03	--	1.500CCE+07
SGF	1	1	2195	1.0000E-03	--	1.500CCE+07
SGG	1	1	2236	1.0000E-03	--	1.500CCE+07
SGI	1	1	75	1.0000E-03	4.99000E+04	1.500CCE+07
SGN	1	1	2100	1.0000E-03	--	1.500CCE+07
SGT	1	1	2176	1.0000E-03	--	1.50000E+07
SGTR	1	1	2176	1.0000E-03	--	1.500CCE+07
SGX	1	1	2223	1.0000E-03	--	1.500CCE+07
SG2N	1	1	15	1.0000E-03	7.03000E+06	1.500CCE+07
SG3N	1	1	6	1.0000E-03	1.35000E+07	1.500CCE+07
ST	2	6	3	0.0	--	1.000CCE+00
STD	0	3	1	--	--	--
STGF	3	8	33	5.0000E+01	--	2.500CCE+05
SGNC	1	1	FOR 126 ENERGIES BETWEEN 4.649998E+02 EV AND 1.500CC0E+07 EV			
SGIZ	1	1	FOR 19 EXCITED LEVELS			

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
4.408C0E+04	48	1.0000E-03	4.99000E+04	1.70000E+06
1.45960E+05	36	1.0000E-03	2.02000E+05	1.70000E+06
3.03600E+05	28	1.0000E-03	6.64000E+05	1.70000E+06
6.05180E+05	22	1.0000E-03	6.64000E+05	1.70000E+06
6.61450E+05	23	1.0000E-03	7.43000E+05	1.70000E+06
9.41500E+05	18	1.0000E-03	9.66000E+05	1.70000E+06
9.62770E+05	18	1.0000E-03	9.73000E+05	1.70000E+06
9.68900E+05	17	1.0000E-03	9.87000E+05	1.70000E+06
9.83000E+05	16	1.0000E-03	9.89000E+05	1.70000E+06
9.85460E+05	15	1.0000E-03	1.00000E+06	1.70000E+06
1.02850E+06	13	1.0000E-03	1.07400E+06	1.70000E+06
1.06990E+06	11	1.0000E-03	1.08700E+06	1.70000E+06
1.08260E+06	11	1.0000E-03	1.20700E+06	1.70000E+06
1.20270E+06	10	1.0000E-03	1.23300E+06	1.70000E+06
1.22860E+06	8	1.0000E-03	1.26900E+06	1.70000E+06
1.26420E+06	8	1.0000E-03	1.35000E+06	1.70000E+06
1.44730E+06	6	1.0000E-03	1.50000E+06	1.70000E+06
1.62140E+06	4	1.0000E-03	1.64300E+06	1.70000E+06
1.63660E+06	3	1.0000E-03	1.70000E+06	1.70000E+06

Table 2 cont.

****
*   *
* PU239 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	CATA.SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	117	--	--	--
ALPHA	1	1	7230	1.0000E-03	--	1.500CCE+07
CHICR	1	3	1	0.0	--	2.000CCE-06
CHIF	1	1	175	1.0000E-03	--	1.000CCE+07
ETA	1	1	6134	1.0000E-03	--	1.500CCE+07
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	48	1.0000E-03	--	1.500CCE+07
NUE	1	1	7	1.0000E-03	--	1.500CCE+07
PLNUE	0	4	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	258	-1.2000E+00	--	6.5829CE+02
SGA	1	1	8453	1.0000E-03	--	1.500CCE+07
SGALP	1	1	2	1.0000E-03	--	1.500CCE+07
SGF	1	1	7157	1.0000E-03	--	1.500CCE+07
SGG	1	1	8336	1.0000E-03	--	1.500CCE+07
SGI	1	1	110	1.0000E-03	8.50000E+03	1.500CCE+07
SGN	1	1	5547	1.0000E-03	--	1.500CCE+07
SGP	1	1	2	1.0000E-03	--	1.000CCE+07
SGT	1	1	7028	1.0000E-03	--	1.500CCE+07
SGTR	1	1	454	1.0000E-03	--	1.500CCE+07
SGX	1	1	8465	1.0000E-03	--	1.500CCE+07
SG2N	1	1	30	1.0000E-03	5.80000E+06	1.500CCE+07
SG3N	1	1	8	1.0000E-03	1.28000E+07	1.500CCE+07
ST	2	6	5	0.0	--	1.000CCE+00
STD	0	3	1	--	--	--
STGF	3	8	55	5.0000E+01	--	2.500CCE+05
SGNC	1	1	FOR	43 ENERGIES BETWEEN	1.000000E+04 EV AND	1.5200C0E+07 EV
SGIZ	1	1	FOR	7 EXCITED LEVELS		

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
8.00000E+03	38	1.0000E-03	8.50000E+03	5.50000E+05
5.70000E+04	23	1.0000E-03	6.00000E+04	5.50000E+05
7.6C0C0E+04	25	1.0000E-03	8.00000E+04	5.5000CE+05
1.640C0E+05	16	1.0000E-03	1.70000E+05	5.50000E+05
2.860C0E+05	13	1.0000E-03	2.90000E+05	5.50000E+05
3.31000E+05	9	1.0000E-03	3.40000E+05	5.50000E+05
3.92000E+05	7	1.0000E-03	4.00000E+05	5.50000E+05

Table 2 cont.

```
************
*          *
* PU240    *
*          *
************
```

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	72	--	--	--
ALPHA	1	1	186	1.0000E-03	--	1.5000CE+07
CHICR	1	3	2	1.0000E-03	--	1.5000CE+07
ETA	1	1	78	1.0000E-03	--	1.5000CE+07
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	46	1.0000E-03	--	1.5000CE+07
NUE	1	1	2	1.0000E-03	--	1.5000CE+07
PLNUE	0	4	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	204	1.0580E+00	--	3.9900CE+03
SGA	1	1	138	1.0000E-03	--	1.5000CE+07
SGF	1	1	2445	1.0000E-03	--	1.5000CE+07
SGG	1	1	2498	1.0000E-03	--	1.5000CE+07
SGI	1	1	59	1.0000E-03	4.99000E+04	1.5000CE+07
SGN	1	1	2392	1.0000E-03	--	1.5000CE+07
SGT	1	1	2417	1.0000E-03	--	1.5000CE+07
SGTR	1	1	99	1.0000E-03	--	1.5000CE+07
SGX	1	1	123	1.0000E-03	--	1.5000CE+07
SG2N	1	1	12	1.0000E-03	6.70000E+06	1.5000CE+07
SG3N	1	1	5	1.0000E-03	1.22000E+07	1.5000CE+07
ST	2	6	5	0.0	--	2.0000E+00
STD	0	3	1	--	--	--
STGF	3	8	55	5.0000E+01	--	2.5000CE+05
SGNC	1	1	FOR	70 ENERGIES BETWEEN	1.000000E+03 EV AND	1.5000CE+07 EV
SGIZ	1	1	FOR	20 EXCITED LEVELS		

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
4.30000E+04	35	1.0000E-03	4.99000E+04	1.5000CE+06
1.42000E+05	23	1.0000E-03	2.47000E+05	1.5000CE+06
2.94000E+05	23	1.0000E-03	5.50000E+05	1.5000CE+06
5.97000E+05	21	1.0000E-03	6.49000E+05	1.5000CE+06
6.49000E+05	19	1.0000E-03	7.05000E+05	1.5000CE+06
7.42000E+05	18	1.0000E-03	8.61000E+05	1.5000CE+06
8.61000E+05	17	1.0000E-03	9.00000E+05	1.5000CE+06
9.00000E+05	15	1.0000E-03	9.38000E+05	1.5000CE+06
9.38000E+05	13	1.0000E-03	9.59000E+05	1.5000CE+06
9.59000E+05	14	1.0000E-03	1.00200E+06	1.5000CE+06
1.00200E+06	13	1.0000E-03	1.03100E+06	1.5000CE+06
1.03100E+06	11	1.0000E-03	1.03800E+06	1.5000CE+06
1.03800E+06	11	1.0000E-03	1.09100E+06	1.5000CE+06
1.09100E+06	10	1.0000E-03	1.11600E+06	1.5000CE+06
1.11600E+06	5	1.0000E-03	1.41100E+06	1.5000CE+06
1.13700E+06	8	1.0000E-03	1.16100E+06	1.5000CE+06
1.16100E+06	4	1.0000E-03	1.41100E+06	1.5000CE+06
1.30800E+06	4	1.0000E-03	1.43800E+06	1.5000CE+06
1.41100E+06	4	1.0000E-03	1.43800E+06	1.5000CE+06
1.43800E+06	3	1.0000E-03	1.50000E+06	1.5000CE+06

Table 2 cont.

****
*   *
* PU241 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	36	--	--	--
ALPHA	1	1	1007	0.0	--	1.50000E+07
CHICR	1	3	2	1.0000E-03	--	1.50000E+07
ETA	1	1	653	1.0000E-03	--	1.50000E+07
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	54	1.0000E-03	--	1.50000E+07
NUE	1	1	2	1.0000E-03	--	1.50000E+07
PLNUE	0	4	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	123	2.6000E-01	--	1.60500E+02
SGA	1	1	1203	1.0000E-03	--	1.50000E+07
SGF	1	1	1197	1.0000E-03	--	1.50000E+07
SGG	1	1	1217	1.0000E-03	--	1.50000E+07
SGI	1	1	53	1.0000E-03	4.99000E+04	1.50000E+07
SGN	1	1	820	1.0000E-03	--	1.50000E+07
SGT	1	1	1144	1.0000E-03	--	1.50000E+07
SGTR	1	1	1142	1.0000E-03	--	1.50000E+07
SGX	1	1	1200	1.0000E-03	--	1.50000E+07
SG2N	1	1	16	1.0000E-03	6.07000E+06	1.50000E+07
SG3N	1	1	7	1.0000E-03	1.22000E+07	1.50000E+07
ST	2	6	6	0.0	--	1.00000E+00
STD	0	3	1	--	--	--
STGF	3	8	66	5.0000E+01	--	2.50000E+05
SGNC	1	1	FOR	72 ENERGIES BETWEEN	9.999997E+01 EV AND	1.50000E+07 EV
SGIZ	1	1	FOR	20 EXCITED LEVELS		

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
4.00000E+04	25	1.00000E-03	4.99000E+04	1.00000E+06
9.20000E+04	24	1.0000E-03	1.00000E+05	1.00000E+06
1.63000E+05	22	1.00000E-03	1.67000E+05	1.00000E+06
1.67000E+05	17	1.0000E-03	1.72000E+05	1.00000E+06
1.69000E+05	19	1.0000E-03	1.72000E+05	1.00000E+06
1.72000E+05	18	1.0000E-03	2.00000E+05	1.00000E+06
2.30000E+05	17	1.0000E-03	2.35000E+05	1.00000E+06
2.35000E+05	14	1.0000E-03	2.44000E+05	1.00000E+06
2.35100E+05	13	1.0000E-03	2.96000E+05	1.00000E+06
2.44000E+05	14	1.0000E-03	2.96000E+05	1.00000E+06
2.96000E+05	13	1.0000E-03	3.34000E+05	1.00000E+06
3.34000E+05	13	1.0000E-03	4.00000E+05	1.00000E+06
4.44000E+05	11	1.0000E-03	4.99000E+05	1.00000E+06
4.99000E+05	10	1.0000E-03	5.68000E+05	1.00000E+06
5.68000E+05	8	1.0000E-03	8.09000E+05	1.00000E+06
8.09000E+05	7	1.0000E-03	8.35000E+05	1.00000E+06
8.35000E+05	6	1.0000E-03	8.75000E+05	1.00000E+06
8.75000E+05	5	1.0000E-03	9.31000E+05	1.00000E+06
9.31000E+05	4	1.0000E-03	9.94000E+05	1.00000E+06
9.94000E+05	3	1.0000E-03	1.00000E-03	1.00000E+06

Table 2 cont.

****
*   *
* PU242 *
*   *
****

TYPE	ARGUMENTS	FUNCT.-VALUES	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
AASTATUS	1	1	36	--	--	--
CHICR	1	3	2	1.0000E-03	--	1.5000CE+07
ISOT1	0	3	1	--	--	--
ISOT2	0	3	1	--	--	--
MUEL	1	1	53	1.0000E-03	--	1.5000CE+07
NUE	1	1	2	1.0000E-03	--	1.5000CE+07
PLNUE	0	4	1	--	--	--
RANGRES	0	4	1	--	--	--
RES	3	8	37	2.6500E+00	--	4.9480CE+02
SGA	1	1	1736	1.0000E-03	--	1.5000CE+07
SGF	1	1	1179	1.0000E-03	5.00000E-01	1.5000CE+07
SGG	1	1	1745	1.0000E-03	--	1.5000CE+07
SGI	1	1	55	1.0000E-03	4.99000E+04	1.5000CE+07
SGN	1	1	1656	1.0000E-03	--	1.5000CE+07
SGT	1	1	1696	1.0000E-03	--	1.5000CE+07
SGTR	1	1	1691	1.0000E-03	--	1.5000CE+07
SGX	1	1	1738	1.0000E-03	--	1.5000CE+07
SG2N	1	1	12	1.0000E-03	6.70000E+06	1.5000CE+07
SG3N	1	1	5	1.0000E-03	1.22000E+07	1.5000CE+07
ST	2	6	3	0.0	--	1.0000CE+00
STD	0	3	1	--	--	--
STGF	3	8	33	5.0000E+01	--	2.5000CE+05
SGNC	1	1	FOR 74 ENERGIES BETWEEN 2.000000E+02 EV AND 1.5000C0E+07 EV			
SGIZ	1	1	FOR 17 EXCITED LEVELS			

LEVEL	DATA SETS	FIRST ARGUM.	THRESHOLD	LAST ARGUM.
4.40000E+04	32	0.2912E-79	4.99000E+04	1.50000E+06
1.46000E+05	23	1.0000E-03	2.47000E+05	1.50000E+06
2.94000E+05	23	1.0000E-03	5.50000E+05	1.5000CE+06
5.97000E+05	20	1.0000E-03	6.49000E+05	1.5000CE+06
6.49000E+05	18	1.0000E-03	7.05000E+05	1.5000CE+06
7.42000E+05	17	1.0000E-03	8.61000E+05	1.5000CE+06
9.56000E+05	12	1.0000E-03	9.95000E+05	1.5000CE+06
9.95000E+05	12	1.0000E-03	1.00200E+06	1.5000CE+06
1.00200E+06	11	1.0000E-03	1.03100E+06	1.5000CE+06
1.03100E+06	10	1.0000E-03	1.03800E+06	1.5000CE+06
1.03800E+06	9	1.0000E-03	1.09100E+06	1.5000CE+06
1.09100E+06	8	1.0000E-03	1.10700E+06	1.5000CE+06
1.10700E+06	7	1.0000E-03	1.16100E+06	1.5000CE+06
1.16100E+06	6	1.0000E-03	1.41100E+06	1.5000CE+06
1.30800E+06	5	1.0000E-03	1.41100E+06	1.5000CE+06
1.41100E+06	4	1.0000E-03	1.43800E+06	1.5000CE+06
1.43800E+06	3	1.0000E-03	1.50000E+06	1.5000CE+06

TABLE 3: Nomenclature of data types on KEDAK

Name of data type	Further names	Arguments	Functional values
AASTATUS	-	1	1 (1) bibliographic information giving data types and energy regions of recent evaluations.
ISØT 1	-	-	1. Atomic weight (A) 2. Atomic number (Z) 3. Nuclear spin of ground state (I)
ISØT 2	-	-	1. $\lambda\sqrt{E} = \hbar/\sqrt{2m_n} \cdot \frac{A+1}{A}$ = reduced neutron wave length $\lvert eV^{1/2}\, b^{1/2} \rvert$ 2. R = nuclear radius $\lvert b^{1/2} \rvert$ 3. E_B = binding energy of the last neutron in compound nucleus
ISØT 3	-	Isotopic weight	Isotopic abundance (%)
CHICR	-	neutron incident energy	1. A 2. B 3. C Parameters of the Cranberg fission spectrum
CHIF	-	neutron outgoing energy	energy spectrum of prompt fission neutrons (thermal fission)
CHIFD	-	"	energy spectrum of delayed fission neutrons (thermal fission)
RANGRES	-	-	1. E_L - lower, E_U - upper: energy boundaries of the region in which resolved resonance parameters given under "RES" are valid. 3. number of resolved resonances given by "RES" 4. flag which indicates whether resolved resonance parameters should preferable be taken for group constant calculations or pointwise given cross section values. It may have the following values. 2. - cross section values 1. - resolved resonance parameters: should be taken 0. - no preference can be recommended

Table 3 cont.

Name of data type	Further names	Arguments	Functional values
RES	-	1. Resonance energy	1. $g_J = (2J+1)/(2(2I+1)$, abundance
		2. Neutron orbital angular momentum (L)	2. total half width Γ
			3. neutron half width Γ_n
		3. Compound nucleus spin (J)	4. capture half width Γ_γ
			5. fission half width Γ_f
			6. (n,p)-half width Γ_p
			7. (n,α)-half width Γ_α
			8. (n,n')-half width $\Gamma_{n'}$
ST	-	1.L	1. average capture width $\overline{\Gamma_\gamma}$
		2.J	2. average level spacing $\bar{D}$
			3. average reduced neutron width $\overline{\Gamma_n^{(o)}}$
			4. strength function $\overline{\Gamma_n(o)}/\bar{D}$
			5. number of exit channels in fission ν_f
			6. number of exit channels in neutron elastic scattering (ν_n)
STD	-	-	1. average observed level spacing
			2. a } parameters of the statistical
			3. $2\sigma^2$ } theory
STGF	-	1. neutron incident energy	1. number of exit channels in fission ν_f
		2. L	2. average fission width $\overline{\Gamma_f}$ for the number of exit channels ν_f
		3. J	3. average capture width $\overline{\Gamma_\gamma}$
			4. average neutron width $\overline{\Gamma_n}$
			5. S_f } statistical fluctuation factors (3)
			6. S_γ
			7. R_f
			8. R_γ

Table 3 cont.

Name of data type	Further names	Arguments	Functional values
ALPHA	-	neutron incident energy	ratio of capture to fission cross section
ETA	-	"	average number of fission neutrons per neutron absorption
MUEL	-	"	average cosine of the elastic scattering angle in the laboratory system $\cos\theta_L = \overline{\mu_L}$
NUE	-	"	average number of fission neutrons
NUEP	-	"	average number of prompt fission neutrons
PLNUE	-	-	1. ν_0 2. ν_1 3. ν_2 4. ν_3 where $\nu = \sum_{i=0}^{3} \nu_i E^i$ = average total number of fission neutrons
SGA	-	neutron incident energy	absorption cross section
SGALP	-	"	cross section for the (n,α) -process
SGD	-	"	" " " " (n,d) - "
SGF	-	"	fission cross section
SGG	-	"	cross section for the (n,γ) -process
SGHE3	-	"	" " " " (n,He^3)- "
SGH3	-	"	" " " " (n,H^3) - "
SGI	-	"	total inelastic cross section
SGIA	-	"	cross section for the (n,n'α)-process
SGI3A	-	"	" " " " (n,n'3α)- "
SGIP	-	"	" " " " (n,n'p)- "
SGIZ	E_i	"	inelastic cross section for excitation of rest nucleus level E_i
SGIZC	-	"	inelastic scattering cross section to the continuum
SGN	-	"	elastic scattering cross section
SGT	-		total cross section

Table 3 cont.

Name of data type	Further names	Arguments	Functional values
SGTR	-	neutron incident energy	transport cross section
SGX	-	"	non-elastic cross section
SG2HE	-	"	cross section for the (n,2α) -process
SG2N	-	"	" " " " (n,2n) -process
SG3N	-	"	" " " " (n,3n) -process
SG2NA	-	"	" " " " (n,2nα)-process
SG3NA	-	"	" " " " (n,3nα)-process
SGNL	E_o (2)	cosine of scattering angle	differential elastic scattering cross section at the neutron incident energy E_o in the laboratory system
SGNC	E_o (2)	"	differential elastic scattering cross section at the neutron incident energy E_o in the center-of-mass system
SGIL	E_o	"	differential inelastic scattering cross section at the neutron incident energy E_o in the laboratory system
SGIC	E_o	"	differential inelastic scattering cross section at the neutron incident energy E_o in the center-of-mass system
SGILZ	1.E_i 2.E_o	"	differential inelastic scattering cross section for excitation of the rest nucleus level E_i at the neutron incident energy E_o in the laboratory system
SGICZ	1.E_i 2.E_o	"	differential inelastic cross section for excitation of the rest nucleus level E_i at the neutron incident energy E_o in the center-of-mass system
SGNIL	1.E_2 2.E_o	"	differential cross section for elastic and inelastic scattering at the neutron incident energy E_o to neutron outgoing energies between E_o and E_2 in the laboratory system
SGNIC	1.E_2 2.E_o	"	differential cross section for elastic and inelastic scattering at the neutron incident energy E_o to neutron outgoing energies between E_o and E_2 in the center-of-mass system

Table 3 cont.

Name of data type	Further names	Arguments	Functional values
LEGNL	1.E_o 2.order L_m	L	coefficient f_L in the Legendre-polynomial expansion of the differential elastic scattering cross section $\sigma_n(\theta) = \frac{\sigma_n}{4\pi} \sum_{L=o}^{L_m} (2L+1)\, f_L(E)\, P_L(\cos\theta)$ in the laboratory system
LEGNC	1.E_o 2.order L_m	L	coefficient f_L in the Legendre-polynomial expansion of the differential elastic scattering cross section $\sigma_n(\theta) = \frac{\sigma_n}{4\pi} \sum_{L=o}^{L_m} (2L+1)\, f_L(E)\, P_L(\cos\theta)$ in the center-of-mass system
LEGIL	1.E_o 2.order L_m	L	coefficient f_L in the Legendre-polynomial expansion of the differential inelastic scattering cross section $\sigma_{n'}(\theta) = \frac{\sigma_{n'}}{4\pi} \sum_{L=o}^{L_m} (2L+1)\, f_L(E)\, P_L(\cos\theta)$ in the laboratory system
LEGIC	1.E_o 2.order L_m	L	coefficient f_L in the Legendre-polynomial expansion of the differential inelastic scattering cross section $\sigma_{n'}(\theta) = \frac{\sigma_{n'}}{4\pi} \sum_{L=o}^{L_m} (2L+1)\, f_L(E)\, P_L(\cos\theta)$ in the center-of-mass system
LEGILZ	1.E_i 2.E_o 3.order L_m	L	coefficient f_L^i in the Legendre-polynomial expansion of the differential inelastic cross section for excitation of the rest nucleus level E_i

Table 3 cont.

Name of data type	Further names	Arguments	Functional values
			parametric representation of energy spectra at incident neutron energy E_o
SEDIC	E_o	K-identification number for the model used for description:	of neutrons inelastically scattered to a continuum of levels
SED2N	"		of the two neutrons emitted by the (n,2n) process
SED3N	"	K= 1 evaporation spectrum	of the neutrons emitted by the (n,3n) process
SEDF	"	K= 2 Maxwellian spectrum	of fission neutrons
SEDFP	"	K= 3 Watt-Cranberg spectrum	of prompt fission neutrons
SEDFD	"	K= 4 Excitation of discrete levels	of delayed fission neutrons
			3 functional values 1. p-fraction of the spectrum of type K to the total energy distribution 2. Θ (nuclear temperature) - for K = 1,2 a (spectrum parameter) - for K = 3 EC (level excitation energy) - for K = 4 3. K - upper limit for the final neutron energy - for K = 1,2 $0 \leq E' \leq E - U$ or b (spectrum parameter) - for K = 3 or o - for K = 4

(1) The data items of AASTATUS are only formally divided into argument and functional value. They contain the indicated text in successive order.

(2) E_o for this and all pertinent further data types in the laboratory system. This is also true for E_2.

(3) $$S_f = \frac{\langle \Gamma_\gamma \rangle}{\langle \Gamma_n \rangle \langle \Gamma_f \rangle} \cdot \left\langle \frac{\Gamma_n \cdot \Gamma_f}{\Gamma} \right\rangle ;$$

$$S_\gamma = \frac{\langle \Gamma_\gamma \rangle}{\langle \Gamma_n \rangle} \cdot \left\langle \frac{\Gamma_n}{\Gamma} \right\rangle ;$$

$$R_f = \frac{\langle \Gamma_\gamma \rangle}{\langle \Gamma_n \rangle^2 \langle \Gamma_f \rangle} \cdot \left\langle \frac{\Gamma_n^2 \cdot \Gamma_f}{\Gamma} \right\rangle ;$$

$$R_\gamma = \frac{\langle \Gamma_\gamma \rangle}{\langle \Gamma_n \rangle^2} \left\langle \frac{\Gamma_n^2}{\Gamma} \right\rangle ;$$