



INTERNATIONAL ATOMIC ENERGY AGENCY

NUCLEAR DATA SERVICES

DOCUMENTATION SERIES OF THE IAEA NUCLEAR DATA SECTION

IAEA-NDS-34

Rev. 1

EXFOR - VIEN

Various International Evaluated Neutron
Data in EXFOR Format

K. Okamoto, O. Schwerer, H.D. Lemmel

Abstract: The EXFOR-VIEN file contains various evaluated neutron nuclear data that are not part of one of the major evaluated nuclear data libraries. This document summarizes the contents of the EXFOR-VIEN file. The data are available, costfree, from the IAEA Nuclear Data Section on magnetic tape or in printed form.

March 1982

EXFOR - VIEN

Introduction:

Data are given in EXFOR-Format. For an introduction to EXFOR see IAEA-NDS-1. For EXFOR "Dictionaries" (= lists of keywords and abbreviations used) see IAEA-NDS-2 (Microfiche). The detailed EXFOR Manual see IAEA-NDS-3 (Microfiche). Data are available in "standard" or "edited" format, on magnetic tape or as printed listings.

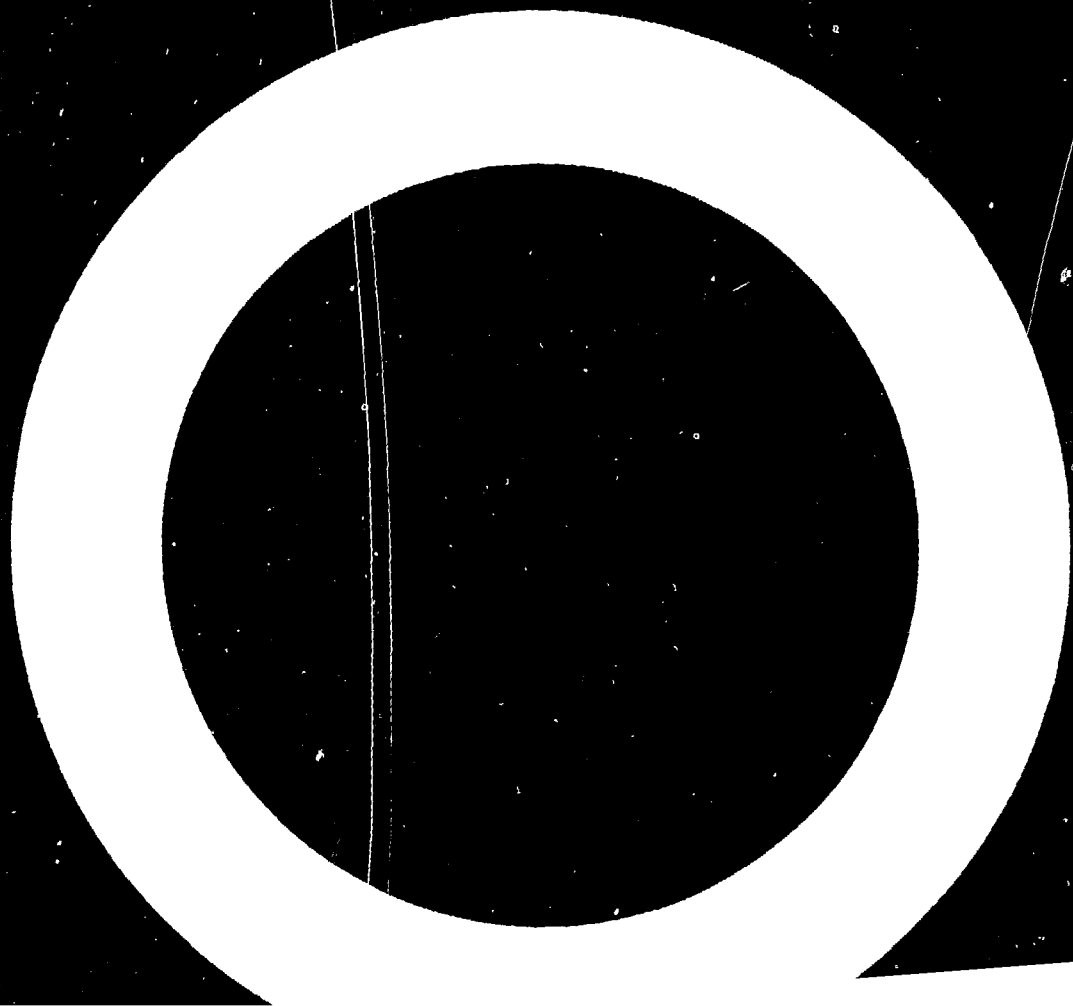
In contrast to the main part of the EXFOR data library which contains experimental neutron data, the EXFOR-VIEN file contains selected evaluated neutron nuclear data. Evaluated neutron data are usually included in one of the major evaluated data libraries in specialized formats of ENDF/B, UKNDL, KEDAK, etc. In the EXFOR-VIEN file, the IAEA Nuclear Data Section aims at collecting evaluated data that are

- not part of one of the major libraries,
- and/or include data types that are not provided in the ENDF/B format.

See also INDL/V for evaluated data that are compiled by the IAEA Nuclear Data Section in ENDF/B-5 format.

The following table summarizes the present contents of the EXFOR-VIEN file. The table is subdivided in the following sections:

1. Comprehensive evaluations in limited energy range
2. Strength functions
3. Selected dosimetry and standard reactions
4. Fissile nuclides
5. Fission neutron yields
6. Miscellaneous



1. Comprehensive evaluations in limited energy range

EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub- entries	Lab	Year of Eval.	Author	Reference	
	V0013 (78/12)	1-H-2	tot, el, (n,2n) 10 keV-15 MeV	3	Bucuresti	1977	Badescu+	IFA-DNR-23, 1977
new	V0027 (82/2)	6-C-12 7-N-14 8-O-16 12-Mg 13-Al-27 15-P-31 16-S 20-Ca	neutron cross-sections from 20 MeV to 50 MeV to supplement the ENDF/B-4 data	90	Harwell	1981	Dimbylow	Phys.Med.Biol.25, 637, 1980
new	V0028 (82/2)	same	Kerma values from 20 MeV to 60 MeV	9	"	"	"	"
	V0016 (80/4)	15-P-31	el, inel, nonel, tot, (n,gamma),(n,2n),(n,p) (n,np), (n,alfa), (n,n alfa), diff inel, spectra of secondary gammas,neutrons, protons, alfas 300 keV - 20 MeV total inelastic 0-20 MeV	234	Wien	1978	Strohmaier+	78 Harwell p. 1184

Comprehensive evaluations in limited energy range (cont'd)

EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub- entries	Lab	Year of Eval.	Author	Reference
V0025 (81/5)	24-Cr-50 24-Cr-52 24-Cr-53 24-Cr-54 26-Fe-54 26-Fe-56 26-Fe-57 28-Ni-58 28-Ni-60 28-Ni-61 28-Ni-62 28-Ni-64	res-pars. up to 500 keV	13	Karlsruhe	1977	Fröhner	77 Geel p. 138
<p>Note: These resonance-parameters were used for the KEDAK-3 evaluations The KEDAK format did not permit to include them.</p>							
V0012 (80/7)	56-Ba-134 56-Ba-135 56-Ba-136 56-Ba-137 56-Ba-138	el, inel, (n,gamma) tot, noncl, (n,2n), (n,3n) (n,p), (n,np), (n,pn) diff el, diff inel. spectra of secondary gammas, neutrons, protons	100	Wien	1978	Strohmaier+	NSE 65, 368, 1978

2. Strength Functions

EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub- entries	Lab	Year of Eval.	Author	Reference
V0023 (81/4)	20-Ca-43 24-Cr-52 26-Fe-56 38-Sr-88 39-Y-89 40-Zr-90 40-Zr-92 40-Zr-94 41-Nb-93 42-Mo-92 42-Mo-94-98 42-Mo-100 56-Ba-138 57-La-139 58-Ce-140 81-Tl-203	strength-function	21	Aligarh	1981	Rathi+	JP/G, 7, 53, 1981

3. Selected dosimetry and standard reactions

EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub- entries	Lab	Year of Eval.	Author	Reference
new V0029 (82/2)	1-H-1	(n,n)	8	NPL	1981	Hayes+	Ann. of Nucl. En. 8 469, 1981
	13-Al-27	(n,alfa)					
	16-S-32	(n,p)					
	26-Fe-56	(n,p)					
	29-Cu-63	(n,2n)					
	29-Cu-65	(n,2n)					
	41-Nb-93	(n,2n)					
79-Au-197	(n,2n)						
		simultaneous eval. at 14.70 MeV					
V0001 (76/1)	13-Al-27	(n,alfa) up to 20 MeV	2	Bucuresti	1974	Vasiliu	IEA-R-10, 1974
V0002 (78/1)	9-F-19	(n,2n) up to 18 MeV	23	Riga	1975	Lapenas+	Book, Riga 1975
	12-Mg-24	(n,2n)					
	13-Al-27	(n,alfa), (n,p)					
	16-S-32	(n,p)					
	25-Mn-55	(n,2n)					
	26-Fe-54	(n,p)					
	26-Fe-56	(n,p)					
	27-Cu-59	(n,alfa)					
	28-Ni-58	(n,p)					
	28-Ni-58	(n,2n)					
	29-Cu-63	(n,2n)					
	29-Cu-65	(n,2n)					
	30-Zn-64	(n,p), (n,2n)					
	40-Zr-90	(n,p)					
	45-Rh-103	(n,n') _m					
	49-In-115	(n,n') _m					
90-Th-232	(n,f), (n,2n)						
92-U-238	(n,f)						
93-Np-237	(n,f)						

Selected dosimetry and standard reactions (cont'd)

EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub- entries	Lab	Year of Eval.	Author	Reference
V0003 (76/1)	same reactions as V0002	fiss. spec. av.	23	Riga	1975	Lapenas	Book, Riga 1975
V0014 (79/6)	12-Mg-24 29-Cu-63 30-Zn-64 40-Zr-90	(n,p) up to 20 MeV (n,2n) (n,p) (n,2n)	5	Wien	1979	Tagesent+	Physik-Daten 13-1, 1979
Note: The INDL/V Library contains the same evaluations in ENDF/B-5 format.							
V0008 (77/11)	28-Ni-58	(n,2n)	2	Warszawa	1977	Adamski+	INR-1709,1977
V0011 (78/6)	79-Au-197	(n,2n), (n,3n) (n,4n) up to 30 MeV	4	Bruyères	1977	Philis+	CEA-R-4826

4. Fissile nuclides

EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub- entries	Lab	Year of Eval.	Author	Reference
V0007 (77/11)	92-U-235	(n,f) 100 eV - 20 MeV	6	Minsk	1976	Konshin	INDC(CCP)-94
V0019 (80/4)	92-U-235	(n,f) 0 eV - 20 MeV	2	Peking	1978	Liu Chi-Tsa	HSJ-77061, 1978
V0005 (77/5)	92-U-237	el, inel, tot (n,gamma), (n,f) 10 keV - 700 keV	7	Soreq	1976	Caner+	NSE 59, 395
V0021 (80/4)	92-U-238	(n,2n), (n,3n)	3	Peking	1978	Chou You-Pu	HSJ-77091, 1978
V0004 (77/5)	92-U-238	diff (n,2n)	3	Soreq	1976	Caner+	NSE 59, 395, 1976
V0020 (80/6)	94-Pu-239	(n,f) 1 keV - 20 MeV	3	Peking	1976	Liu Chi-Tsa	HSJ-75005
V0009 (77/12)	94-Pu-239	capt/fis ratio	2	Obninsk	1977	Kononov+	INDC(CCP)-108
V0006 (76/12)	96-Cm-244	el, inel, tot, (n,gamma), (n,f), diff. el.	8	Buenos Aires	1977	Fernandez-G.	INDC(ARG)-9

5. Fission neutron yields

EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub- entries	Lab	Year of Eval.	Author	Reference
V0015 (80/2)	90-Th-232 92-U-233 92-U-234 92-U-235 92-U-236 92-U-238 94-Pu-239 94-Pu-240 94-Pu-241	nu-bar up to 15 MeV	19	IAEA	1972	Manero+	At. En. Rev. 10, 637
V0010 (78/4)	92-U-233 92-U-235 92-Pu-239 94-Pu-241 98-Cf-252	thermal, nu-bar spont. nu-bar	6	Lucas Heights	1977	Boldeman	77NBS p. 182
V0022 (81/1)	92-U-235	nu-bar up to 15 MeV	3	Peking	1978	Chang Huan	HSJ-76041
V0018 (80/4)	94-Pu-239	nu-bar 10 keV - 15 MeV	3	Peking	1976	Liu-Tsu-Hua	HSJ-75007
V0017 (80/4)	90-Th-232 92-U-233 92-U-235 94-Pu-239 94-Pu-241	delayed fission neutrons from thermal, fast and 14 MeV fission	11	Soreq	1977	Saphir+	NSE 62, 660

6. Miscellaneous

EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub- entries	Lab	Year of Eval.	Author	Reference
V0026	Benzene	(n,tot) 0.002 eV - 2 eV	1	Bariloche	1981	Abbate+	Priv. Comm. 1981