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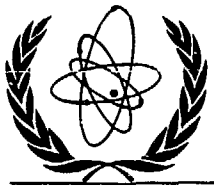

INTERNATIONAL ATOMIC ENERGY AGENCY

NUCLEAR DATA SERVICES

DOCUMENTATION SERIES OF THE IAEA NUCLEAR DATA SECTION

EXFOR - VIEN

Various International Evaluated Neutron Data in EXFOR Format

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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.

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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
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
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
	Note: These resonance-parameters were used for the KEDAK-3 evaluations The KEDAK format did not permit to include them.						
new V0030 (84/4)	42-Mo-92 42-Mo-94 42-Mo-95 42-Mo-96 42-Mo-97 42-Mo-98 42-Mo-100	neutron-emission cross-sections and photon production cross-sections following inelastic scattering resp. absorption of 14.5 MeV neutrons	15	Warszawa	1983	Herman, Marcinkowski	unpublished
V0012 (80/7)	56-Ba-134 56-Ba-135 56-Ba-136 56-Ba-137 56-Ba-138	el, inel, (n,gamma) tot, nonel, (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

		protons					

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	strength-function	21	Aligarh	1981	Rathi+	JP/G, 7, 53, 1981
	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						

3. Selected dosimetry and standard reactions

EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub-entries	Lab	Year of Eval.	Author	Reference
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)					

	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	Tagesen+	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
new	V0035 (84/6)	92-U-233	(n,f) 1 keV - 20 MeV	2	Peking	1977	Li Jing-Wen	HSJ-77067, 1977
new	V0040	92-U-235	scattering		Peking	1980	Yu Bao-Sheng	HSJ-80121, 1981
	entry in preparation							
new	V0038 (84/6)	92-U-235	(n,gamma) 0.9 keV - 14 MeV	2	Peking	1977	Cao Zhong+	HSJ-77123, 1979
new	V0034 (84/6)	92-U-235	capt/fis ratio 1 keV - 1.1 MeV	3	Peking	1977	Ting Shun-Liang	HSJ-77112, 1978
	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 Ji-Cai	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
new	V0036 (84/6)	92-U-238	(n,gamma) 1 keV - 20 MeV	3	Peking	1977	Ding Da-Zhao Guo Tai-Chang	HSJ-77106, 1978

Fissile nuclides (cont'd)

	EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub-entries	Lab	Year of Eval.	Author	Reference
new	V0037 (84/6)	92-U-238	(n,f) 500 keV - 20 MeV	2	Peking	1977	Ye Chun-Tang	HSJ-77062, 1978
	V0021 (80/4)	92-U-238	(n,2n), (n,3n)	3	Peking	1978	Zhou You-Pu	HSJ-77091, 1978
	V0004 (77/5)	92-U-238	diff (n,2n)	3	Soreq	1976	Caner+	NSE 59,395,1976
new	V0031 (84/6)	94-Pu-238	(n,f) 1 keV - 17 MeV	2	Peking	1977	Gu Fu-Hua	HSJ-77065, 1978
new	V0039 (84/6)	94-Pu-239	elastic,nonelastic and diff. el. 0.2-18MeV; inelastic 2-4 MeV	5	Peking	1977	Shi Zhao-Min	HSJ-77123, 1979
new	V0032 (84/6)	94-Pu-239	capt/fis ratio 20 keV - 30 MeV	3	Peking	1977	Lian Qi-Chang	HSJ-77111, 1978
	V0009 (77/12)	94-Pu-239	capt/fis ratio	2	Obninsk	1977	Kononov+	INDC(CCP)-108
	V0020 (80/6)	94-Pu-239	(n,f) 1 keV - 20 MeV	3	Peking	1976	Liu Ji-Cai	HSJ-75005

Fissile nuclides (cont'd)

	EXFOR Acc-Nr (Version)	Nuclide	Reactions	No. of sub-entries	Lab	Year of Eval.	Author	Reference
new	V0033 (84/6)	95-Am-241	(n,f) 1.2 keV - 20 MeV	2	Peking	1981	Gu Fu-Hua	HSJ-81195, 1982
	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	thermal, nu-bar	6	Lucas Heights	1977	Boldeman	77NBS p. 182
	98-Cf-252	spont. nu-bar					
V0022 (81/1)	92-U-235	nu-bar up to 15 MeV	3	Peking	1978	Zhang Huan-Qiao	HSJ-76041
V0018 (80/4)	94-Pu-239	nu-bar 10 keV - 15 MeV	3	Peking	1976	Liu Zu-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