Date: Nov 2013 – Apr 2017

This is a working List for the IRDFF relevant published data, which was found to be missed in EXFOR

I. Cross Sections (= excitation functions)

Reaction	Sigma	Facility	Reference	EXFOR
I. Excitation functions (Mono-energetic Neutron Sources)				
many activation cross sections (including dosimetry) reactions	Sigma at 1 to 180 MeV	UCL, TSL	D. Hansmann, Dissertation submitted to Uni. Hannover "About the production of residual nuclides by neutron induced reactions up to 180 MeV" http://edok01.tib.uni-hannover.de/edoks/e01dh10/642191166.pdf	Entry 22794 compiled Nov 2013
(n,xn) on AI, Ti, Ni, Co, Cu, Y, Nb, Tm and Au	Ep = 20, 22.5, 25, 27.5, 30 and 32 MeV	JAERI	Y. Uno, S. Miego et al., "Measurements of Activation Cross Sections for the Neutron Dosimetry at an energy range from17.5 to 30 MeV by using the 7Li(p,n) quasi-mono-energetic neutron source", 9th Symp. on Reactor Dosimetry, Prague 1996, p. 465	Entry 23279 compiled Nov 2015
(n,2n) on Na-23	En = 19.45 MeV	IRK	B. Strohmaier, M. Wagner et al., Measurement of the 23Na(n,2n)22Na cross section at En = 19.45 MeV and model calculations of cross sections for neutron induced reactions on 23Na. Int. Conf. Nucl. Data for Science and Technology, Juelich, FRG, 13-17 May 1991, pp. 663-665	Entry 29991 compiled Apr 2017

II. Spectrum-averaged cross sections (SPA) or reaction ratios

Reaction	Sigma or Ratio	Facility	Reference	EXFOR
II.1 ^{252}Cf(s.f.) spectrum-averaged cross sections				
^{58}Ni(n,p)/^{54}Fe(n,p)	1.326 ± 0.03	NBS	R. Fleming, V. Spiegel, Proc. of the Second ASTM-EURATOM Symposium on Reactor Dosimetry, Palo Alto, CA (1977) p. 953	to be assigned
^{58}Ni(n,p)^{58}Co ^{27}Al(n,a)^{24}Na ^{46}Ti(n,p)^{46}Sc ^{47}Ti(n,p)^{47}Sc ^{48}Ti(n,p)^{48}Sc ^{54}Fe(n,p)^{54}Mn	118.8 ± 2.7 mb 1.06 ± 0.038 mb 15.0 ± 0.49 mb 20.2 ± 0.63 mb 0.434 ± 0.018mb 90.0 ± 2.6 mb	NBS-VNC	V. Spiegel, C.M. Eisenhauer, J.A. Grundl, G.C. Martin, NUREG/CP-0004, v. 2 (1978) p. 959	to be assigned
^{93}Nb(n,n')^{93m}Nb	149 ± 10 mb	PTB	W.G. Alberts, R. Hollnagel, K. Knauf, M. Matzke, W. Pessara , NUREG/CP-0029, Gaithersburg, v. 1(1982) p. 433	23225, Compiled Feb 2014
^{60}Ni(n,p)^{60}Co (plus ^{59}Co(n,a) ^{58}Ni(n,2n), ^{58}Ni(n,x)^{57}Co)	2.39 ± 0.13 mb	PTB	W. Mannhart NUREG/CP-0029, Gaithersburg, v. 2(1982) p. 637	21817.017 and .014 -.016 Compiled Feb 2014

Th(n,f) U(n,f) Np(n,f)	89 ± 9 mb 373 ± 35 mb 1370 ± 120 mb	Debrecen	M. Buczko, Z.T. Body, J. Csikai, Z.Dezso, S. Juhasz, H.M. Al-Mundheri, G.Peto and M. Vernagy. Int. Symp. on Californium 252 Utilization, April 1976, Brussels-Paris, CONF-760436, v. 2, p. IV-19	Entry 31731 Compiled Feb 2014

II.2 ^{235}U(n,f) spectrum-averaged cross sections

Mn55(n,2n)Mn54 Ni58(n,2n)Ni57 Ni58(n,np)Co57		Kyoto	O. Horibe, H. Chatani, "*Cross Sections of the Reactions* Mn55(n,2n)Mn54, *Ni58(n,2n)Ni57 and Ni58(n,np)Co57 Averaged Over the U-235 Fission Neutron Spectrum"*. Int. Conf. on Nuclear Data., 1991, Julich, pp. 68-70	23223 compiled Dec. 2013
^{58}Ni(n,p)/^{54}Fe(n,p)	1.346 ± 0.03	NBS	R. Fleming, V. Spiegel, Proc. of the Second ASTM-EURATOM Symposium on Reactor Dosimetry, Palo Alto, CA, 1977, p. 953	to be assigned
^{127}I(n,2n)^{126}I	0.647 ± 0.01 mb	BR-1 Mol	P. De Regge, R. Dams, J. Hoste, Radiochimica Acta 9 (1968) 57	23224, compiled Feb 2014
^{10}B(n,a) ^{6}Li(n,a) ^{10}B/^{6}Li(n,a)	541 ± 24 mb 456 ± 20 mb 1.19 ± 2 540 ± 4% mb 455 ± 4% mb	BR-1 Mol	B.M. Oliver et al. Gaithersburg v.2 (1982) 889 ***Re-evaluated by*** J. Grundl, in Proc. of Nuclear data for Basic and Applied Science (May 1985, Santa Fe), v.1, p.471; J. Grundl and C. Eisenhauer Compendium of Benchmarks neutron Fields for Reactor Dosimetry, NBSIR 85-3151, 1986, p. 66; J. Grundl, Radiation Effects 93(1986)135	23226 compiled Feb 2014
Several ratios,e.g. ^{27}Al(n,p)/^{115}In(n,n')		BR-1 Mol	A. Fabry, in Proc. of Prompt Fission Neutron Spectra Meeting, Vienna 1971, p.97	23251 compiled Aug 2014
^{235}U(n,f)/^{238}U(n,f)	3.71 ± 0.17	NBS USA	J.A. Grundl, in Proc. of Prompt Fission Neutron Spectra Meeting, Vienna 1971, p.107	13913 compiled Aug 2014
^{93}Nb(n,2n)^{92m}Nb	433 ± 17 mb	NBS USA	T.G. Williamson, G.P. Lamaze 7th ASTM EURATOM Symposium on Reactor Dosimetry, Strasbourg, 27-31 August 1990, p. 371	to be assigned
^{238}U(n,2n)^{227}U and others ?	12.5 mb	USA	R.P. Schuman, A.C. Mewhertera, *KAPL*-1779 (1957)	

II.3 Reactor neutron spectrum-averaged cross sections

^{10}B(n,a)		EBR-II CFRMF	H. Farrar, W.N. McElroy et al., "*Helium production cross sections of Boron for fast reactor neutron Spectra"*. Nuclear Technology 25(1974)305	has to be compiled ?

II.4 Accelerator-driven neutron source spectrum-averaged cross sections

27 reactions		Be(d,n)	D.L. Smith, J.W. Meadows et al., 7th ASTM EURATOM Symposium on Reactor Dosimetry, Strasbourg, 27-31 August 1990, p. 445	to be assigned

III. Spontaneous fission sources or research reactor spectra used to measure the spectrum-averaged cross sections

Reaction	Sigma or Ratio	Facility	Reference	EXFOR
III.1 YAYOI Spectrum (Central Glory Hole)				
^{237}Np(n,γ)	900 ± 50 mb	YAYOI	H. Harada et al., NST 46(2009)460	Entry 23075 compiled Oct 2013
III.2 ^{252}Cf(s.f.) neutron spectrum				
^{252}Cf(s.f.)	0.01 -1 MeV	NIIAR Dimitrovgrad	Yu.S. Zamyatnin, N.I. Kroshkin, V.A. Korostyiev, V.N. Nefedov, D.K. Ryazanov, B.I. Starostov, A.F. Semenov. Int. Symp. on Californium 252 Utilization, April 1976, Brussels-Paris, CONF-760436-P, v. 2, p. IV-1	has to be compiled ???

NB. NRDC compiles dosimetry data missed in EXFOR, see the list:

https://www-nds.iaea.org/nrdc/memo_cpd/cpd838.doc

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