Table B-3: Thermal neutron capture cross sections and resonance integrals - Fission product nuclear data

Nuclide	Thermal neutron cross section (b)				Resonance Integral (b)				Ref.
36-Kr- 82	σ	30.0	±	10.0	C	190.0	±	20.0	[1]
36-Kr- 83	σ	180.0	±	30.0	C	183.0	±	25.0	[2]
36-Kr- 84	σ(m)	0.090	±	0.013		2.4			[1]
36-Kr- 84	σ(g)	0.042	±	0.004		0.8			[1]
36-Kr- 84	σ(m+g)	0.110	±	0.015		3.2	±	0.5	[1]
36-Kr- 85	σ	1.66	±	0.2		1.8	±	1.0	[1,2]
36-Kr- 86	σ	0.003	±	0.002		0.1	±	0.04	[1]
40-Zr- 90	σ	0.011	±	0.005	C	0.14			[2]
40-Zr- 91	σ	1.24	±	0.25		6.8	±	1.3	[1]
40-Zr- 92	σ	0.22	±	0.06		0.63	±	0.11	[1]
40-Zr- 93	σ	2.6	±	1.4		20.0	±	10.0	[1]
40-Zr- 94	σ	0.0499	±	0.0024		0.30	±	0.07	[1]
40-Zr- 95	σ_0	0.49				6.5	±	1.4	[1]
40-Zr- 96	σ	0.0229	±	0.0010		5.3	±	0.3	[5]
42-Mo- 95	σ	14.0	±	0.5	C	109.0	±	5.0	[2]
42-Mo- 96	σ	0.5	±	0.2		24.0	±	4.0	[1]
42-Mo- 97	σ	2.1	±	0.5	C	14.0	±	3.0	[2]
42-Mo- 98	σ_0	0.130	±	0.006		6.9	±	0.3	[5]
42-Mo-100	σ	0.199	±	0.003		3.75	±	0.15	[2]
44-Ru-100	σ_0	5.0	±	0.6		11.0	±	0.7	[1]
44-Ru-101	σ_0	3.4	±	0.9		88.0	±	17.0	[1]
44-Ru-102	σ_0	1.21	±	0.07		4.2	±	0.1	[2]
44-Ru-103	σ	7.71				60.0	±	20.0	[1]
44-Ru-104	σ_0	0.32	±	0.02		4.3	±	0.1	[2]
44-Ru-106	σ	0.146	±	0.045		1.8	±	0.4	[1]
54-Xe-130	σ_0(m)	0.45	±	0.10	C	1.17			[1]
54-Xe-130	σ_0(g)	6.0	±	1.0	C	13.72			[1]
54-Xe-130	σ_0(m+g)	6.45	±	1.0	C	14.89			[1]
54-Xe-131	σ_0	85.0	±	10.0		900.0	±	100.0	[2]
54-Xe-132	σ_0(m)	0.050	±	0.010		0.9	±	0.2	[1,2]
54-Xe-132	σ_0(m+g)	0.450	±	0.060		4.6	±	0.6	[1,2]
54-Xe-133g	σ_r	190.0	±	90.0		134			
54-Xe-133g	σ_0(m)	0.003	±	0.0003		0.1			[1]
54-Xe-133g	σ_0(m+g)	0.265	±	0.020		0.3			[1]
54-Xe-135g	σ_0	(2.65	±	0.11) E+06	C	7600.0	±	500.	[2]
54-Xe-136	σ_0	0.26	±	0.02		0.74	±	0.21	[1,2]
55-Cs-133	σ_0(m)	2.5	±	0.2		30.0	±	6.0	[1]
55-Cs-133	σ_0(m+g)	29.0	±	1.5		422.0	±	23.0	[1]
55-Cs-134g	σ_r	140.0	±	12.0		106.0			[6]
55-Cs-135	σ	8.7	±	0.5		66.0	±	8.0	[1]
55-Cs-137g	σ_r(g)	0.110	±	0.033		0.35	±	0.07	[6]

58-Ce-144g	σ	1.0	±	0.1		2.6	±	0.3	[1,2]	
59-Pr-141	σ_0(m)	3.9	±	0.3						
59-Pr-141	σ_0(m+g)	11.5	±	0.3		17.8	±	3.5	[1]	
59-Pr-143	σ	90.0	±	10.0		190.0	±	25.0	[2]	
60-Nd-142	σ	18.7	±	0.7		8.5	±	1.0	[1]	
60-Nd-143	σ_0	325.0	±	10.0		136.0	±	35.0	[1]	
60-Nd-144g	σ	3.6	±	0.3		5.0	±	1.0	[1]	
60-Nd-145	σ_0	42.0	±	2.0		255.0	±	40.0	[1]	
60-Nd-146	σ_0	1.4	±	0.1		2.7	±	0.4	[1]	
60-Nd-147	σ	440.0	±	150.0		540.0	±	150.0	[1]	
60-Nd-148	σ_0	2.5	±	0.2		14.0	±	1.5	[1,2]	
60-Nd-150	σ_0	1.2	±	0.2		14.5	±	2.0	[1,2]	
61-Pm-147	σ(m)	85.0	±	5.0		910.0	±	265.0	[1]	[1])
61-Pm-147	σ(g)	96.0	±	2.0		1320.0	±	85.0	[1]	
61-Pm-147	σ(m+g)	181.0	±	7.0		2230.0	±	70.0	[1]	[2])
61-Pm-148m	σ	22000.0	±	2500.0		3600.0	±	2400.0	[1,3]	
61-Pm-148g	σ_r	2000.0	±	1000.0		2510.0			[6]	
61-Pm-149	σ	1400.0	±	300.0		825.0	±	50.0	[1]	
61-Pm-151	σ	173.0				1400.0	±	400.0	[1]	
62-Sm-147	σ	64.0	±	5.0		650.0	±	50.0	[1]	
62-Sm-148	σ	2.7	±	0.6		27.0	±	14.0	[1,3]	
62-Sm-149	σ	41000.0	±	2000.0		3700.0	±	400.0	[1]	
62-Sm-150	σ_0	102.0	±	5.0		358.0	±	50.	[3]	
62-Sm-151	σ	15000.0	±	1800.0		3100.0	±	500.0	[1]	
62-Sm-152	σ_0	206.0	±	6.0		2960.0	±	150.0	[1]	
62-Sm-153	σ_0	420.0	±	180.0	[3])	3700.0	±	2000.0	[1]	
62-Sm-154	σ_0	7.74	±	0.46	[4])	33.3	±	3.0	[4]	[4])
63-Eu-151	σ(m2)	4.2	±	2.0						
63-Eu-151	σ(m1)	3211.0	±	82.0		1823.0	±	146.0	[1]	
63-Eu-151	σ(g)	5935.0	±	73.0		3552.0	±	264.0	[1]	
63-Eu-151	σ(total)	9146.0	±	109.0		5367.0	±	263.0	[1]	
63-Eu-152	σ	12800.0	±	600		2170.0			[6]	
63-Eu-153	σ_0	312.0	±	7.0	[5])	1420.0	±	100.0	[3]	[5])
63-Eu-154g	σ_0	1500.0	±	400.0		1500.0	±	450.0	[1]	
63-Eu-155	σ_r	4040.0	±	125.0	[6])	1680.0	±	300.0	[1]	[6])
63-Eu-155	σ	3950.0	±	125.0	[6])	C 23200.0	±	300.0	[3]	[6])

[1]) Original value in [1] = 1045 ± 265 b, adjusted here (within the error limits) to give the correct sum (m+g).

[2]) The higher value of [1] is supported by the data from JENDL-3 (2199 b) and ENDF/B-6 (2197 b), whereas [3] gives 2064 ± 100 b.

[3]) [3] used, as uncertainty is given. Other values: 334.5 b [1],

420.2 b (JENDL-3), 330 b (ENDF/B-6).

[4]) Taken from [4] because of discrepancies between [1] and [3].

[5]) [1] gives 603 and 3414 b respectively, but recent evaluations ([4], ENDF/B-6) support the lower values.

[6]) Both sets of data given for comparison. Other values: ENDF/B-6: same as [3], JENDL-3: 4071 b and 6755 b respectively.