LBL-10436
Preprint

Lawrence Berkeley Laboratory
UNIVERSITY OF CALIFORNIA

Prepared for publication in the book Nuclear and Radiochemistry (3rd Edition); Gerhart Friedlander, Joseph W. Kennedy, Edward S. Macias, and Julian Malcolm Miller, John Wiley and Sons, Inc., New York (1980)

TABLE OF NUCLIDES

V. S. Shirley and C. M. Lederer

January 1980

Prepared for the U.S. Department of Energy under Contract W-7405-ENG-48

LBL-10436

TABLE OF NUCLIDES

V. S. Shirley
C. M. Lederer

Isotopes Project
Nuclear Science Division
Lawrence Berkeley Laboratory
University of California
Berkeley, California 94720

January 1980

TABLE OF NUCLIDES

V.S. Shirley
C.M. Lederer

This table presents properties of nuclides, both stable and radioactive, adopted from the 7th edition of the *Table of Isotopes*.[1] The data are based on experimental results reported in the literature, with the cutoff date varying from January to December, 1977. (The earliest date refers to the lightest nuclides, and *vice versa*.) Most mass excesses are from the 1977 Atomic Mass Evaluation,[2] with some recent experimental values added. For a few of the very unstable nuclides for which no values were reported in the 1977 Atomic Mass Evaluation, estimates are taken from the tables of W.D. Myers.[3] Natural isotopic abundances[4] and neutron cross sections[5] are taken from compilations by N.E. Holden. For other references, original data, and information on the data measurements, the reader is referred to reference 1.

Column 1, Nuclide:

Nuclides are listed in order of increasing atomic number (Z), and are subordered by increasing mass number (A). All isotopic species with half-lives longer than about 1 s are included, as are the few shorter lived ground states, fission isomers, and "historic" isomers (e.g., ^{24m}Na). Isotopes in reference 1 with ambiguous or very uncertain assignments, or whose assignments are probably in error (class "G"), have been omitted. Also not included are those nuclides identified in nuclear reactions, but for which radioactive decay has not been observed (class "R" in reference 1). Isomeric states are denoted by the conventional symbols m, m_1, m_2, etc. Identical mass assignments (with no "m") for several species indicate that the relative positions of the isomers are unknown.

Column 2, $t_{1/2}$ or abundance:

Half-lives are given in plain type, natural isotopic abundances in italics. Half-lives are rounded so that the uncertainty is ≤5 units in the last place. A question mark following the half-life indicates that the assignment of the half-life (and other measured decay properties) to the listed values of Z and A is rather uncertain (nuclides with class "F" in reference 1).

Abundances are also rounded to an uncertainty of ≲5 units in the last place, although the uncertainties are not well known. (Note that, because of the rounding, the abundances for an element do not always add to exactly 100%.) For additional information on abundances observed in specific sources and variations in abundances, the reader is referred to references 1 and 4.

Column 3, Decay Mode:

- β^- negative beta decay
- β^+ and/or EC positive beta decay. The entry of these modes alone or in various combinations involves the following conventions -- β^+,EC or EC,β^+: both β^+ and EC have been shown experimentally to occur, with the first-named mode probably dominant from theoretical considerations (percentage branchings are given when known -- e.g., EC 90%,β^+ 10%); β^+: β^+ has been observed or inferred from genetic relationships, with EC probably ≲1% from theoretical considerations (*vice versa* for EC); β^++EC or EC+β^+: the first-named mode has been observed or inferred from genetic relationships; the second mode is probably ≳1% from theoretical considerations.
- IT isomeric transition (γ-ray and conversion-electron decay)
- α alpha decay
- SF spontaneous fission (listed only if branching by this mode is ≳1%)
- p direct proton decay (^{53m}Co)
- $\beta^-\beta^-$ double negatron emission
- β^-n "delayed" neutron emission following β^- decay to unbound states. Other delayed particle-emission modes include $\beta^-\alpha$, β^+p, $\beta^+\alpha$, β^+SF, etc.
- 2α, nα, etc. various decay modes for particle-unstable nuclides.

Decay modes inferred from the means of production are enclosed in square brackets. For nuclides that decay by more than one mode, branching ratios are given if known; they are rounded so that the uncertainty is ≤5 units in the last place.

Column 4, Δ:

Mass excesses are given in MeV, with $\Delta(^{12}C)$ defined as zero. Values are quoted to the number of significant figures implied in reference 2, except that very precise values have been rounded to the nearest keV. An appended s denotes a mass excess estimated from systematic considerations.

Column 5, Jπ:

Spin and parity assignments without parentheses are definite; assignments in parentheses are probable. Values enclosed in square brackets are inferred from systematics.

Column 6, σ_n:

Neutron cross sections are given in b (barn$\equiv 10^{-24}$ cm^2); and, in the absence of additional notation, refer to thermal neutron capture cross sections [$\sigma_c=\sigma(n,\gamma)$] at a neutron velocity of 2200 m/s (E=0.0253 eV, or T=293 °K). A superscript sc following the value indicates a cross-section measurement with "subcadmium" neutrons, those with energy $\lesssim$0.5 eV to which a cadmium absorber is "opaque"; the superscript rs refers to "reactor spectrum" neutrons, with an energy spectrum that is not well defined but which is approximately characteristic of a "thermal" irradiation position in a reactor. The subscripts f (fission), a (total absorption), nα [$\sigma(n,\alpha)$], and np [$\sigma(n,p)$] identify cross sections other than the capture cross section. m and g as subscripts stand for "metastable" and "ground", and are used wherever separate cross sections are reported for capture to ground and isomeric states. For those cases for which a single total cross section includes both direct capture and indirect capture via the isomeric states, the subscript g+m is used. For additional details, the reader is referred to reference 1.

References

1) *Table of Isotopes*, 7th edition: C.M. Lederer and V.S. Shirley, editors; E. Browne, J.M. Dairiki, and R.E. Doebler, principal authors; A.A. Shihab-Eldin, L.J. Jardine, J.K. Tuli, and A.B. Buyrn, authors, John Wiley and Sons, Inc., New York (1978).
2) A.H. Wapstra and K. Bos, Atomic Data and Nucl. Data Tables **19**, 175(1977) and **20**, 1(1977); Errata: Atomic Data and Nucl. Data Tables **20**, 126(1977).
3) W.D. Myers, *Droplet Model of Atomic Nuclei*, IFI/Plenum Data Company, New York (1977); see also: Atomic Data and Nucl. Data Tables **17**, 474 (1976).
4) N.E. Holden, Brookhaven National Laboratory Report No. BNL-NCS-50605, 1977 (unpublished).
5) N.E. Holden, private communication to C.M. Lederer and V.S. Shirley (1977).

Work performed under the auspices of the U.S. Department of Energy. Additional funding provided by the U.S. National Bureau of Standards, Office of Standard Reference Data.

TABLE OF NUCLIDES

Z	Nuclide El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
0	n	1	10.6 m	β^-,no γ	8.071	1/2+	
1	H	1	*99.985%*		7.289	1/2+	0.332
		2	*0.0148%*		13.136	1+	5.2×10^{-4}
		3	12.33 y	β^-,no γ	14.950	1/2+	$<6\times10^{-6}$ sc
2	He	3	*1.38×10⁻⁴%*		14.931	1/2+	5.33×10^{3} np
		4	*99.99986%*		2.425	0+	
		6	0.808 s	β^-,no γ	17.597	0+	
		8	0.122 s	β^-,β^-n 12%	31.609	0+	
3	Li	6	*7.5%*		14.087	1+	942 nα
		7	*92.5%*		14.908	3/2-	0.045 rs
		8	0.84 s	$\beta^-2\alpha$	20.947	2+	
		9	0.178 s	β^-,β^-n2α 35%	24.955	(3/2)-	
		11	8.5 ms	β^-,β^-n 61%	40.94		
4	Be	7	53.3 d	EC	15.770	3/2-	5×10^{4} rs np
		9	*100%*		11.348	3/2-	0.008
		10	1.6×10^{6} y	β^-,no γ	12.608	0+	<0.001 rs
		11	13.8 s	β^-,$\beta^-\alpha$ 3%	20.176	1/2+	
		12	11.4 ms	β^-,β^-n	25.03	0+	
5	B	8	0.769 s	$\beta^+2\alpha$	22.922	2+	
		10	*19.8%*		12.052	3+	3838 nα
		11	*80.2%*		8.668	3/2-	0.005 rs
		12	20.4 ms	β^-,β^-3α 1.6%	13.370	1+	
		13	17.4 ms	β^-,β^-n 0.28%	16.562	3/2-	
		14	16 ms	β^-	23.657	2-	
6	C	9	0.1265 s	β^+p2α	28.912	(3/2-)	
		10	19.2 s	β^+	15.703	0+	
		11	20.38 m	β^+ 99.76%, EC 0.24%,no γ	10.650	3/2-	
		12	*98.89%*		0	0+	0.0034
		13	*1.11%*		3.125	1/2-	9×10^{-4}
		14	5730 y	β^-,no γ	3.020	0+	$<1\times10^{-6}$ rs
		15	2.449 s	β^-	9.873	1/2+	
		16	0.75 s	β^-n >98.8%	13.693	0+	
7	N	12	11.0 ms	β^+,β^+3α 3.5%	17.338	1+	
		13	9.96 m	β^+,no γ	5.346	1/2-	
		14	*99.63%*		2.863	1+	1.82 sc np
		15	*0.366%*		0.102	1/2-	4×10^{-5} rs
		16	7.13 s	β^-,$\beta^-\alpha$ 0.0012%	5.682	2-	
		17	4.17 s	β^-,β^-n 95%	7.870	1/2-	
		18	0.63 s	β^-	13.274	0,1,2-	
8	O	13	8.9 ms	β^+p	23.105	3/2-	
		14	70.60 s	β^+	8.008	0+	
		15	122 s	β^+ 99.89%, EC 0.11%,no γ	2.855	1/2-	
		16	*99.76%*		-4.737	0+	1.8×10^{-4} rs
		17	*0.038%*		-0.810	5/2+	0.235 sc nα
		18	*0.204%*		-0.783	0+	1.6×10^{-4}
		19	26.9 s	β^-	3.331	5/2+	
		20	13.5 s	β^-	3.799	0+	
9	F	17	64.5 s	β^+,no γ	1.952	5/2+	
		18	109.8 m	β^+ 96.9%, EC 3.1%,no γ	0.872	1+	
		19	*100%*		-1.487	1/2+	0.010 rs
		20	11.0 s	β^-	-0.017	2+	
		21	4.32 s	β^-	-0.047	5/2+	
		22	4.23 s	β^-	2.826	4+	
		23	2.2 s	β^-	3.35	(5/2)+	
10	Ne	17	0.109 s	β^+p	16.478	1/2-	
		18	1.67 s	β^+	5.319	0+	
		19	17.3 s	β^+ 99+%,EC 0.102%	1.751	1/2+	
		20	*90.51%*		-7.043	0+	0.038 rs
		21	*0.27%*		-5.733	3/2+	0.7 rs

TABLE OF NUCLIDES

Z	Nuclide El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
10	Ne	22	*9.22%*		-8.026	0+	0.05 rs
		23	37.6 s	β^-	-5.155	5/2+	
		24	3.38 m	β^-	-5.949	0+	
		25	0.60 s	β^-	-2.15	(1/2)+	
11	Na	20	0.446 s	β^+,$\beta^+\alpha$ 21%	6.844	2+	
		21	22.47 s	β^+	-2.186	3/2+	
		22	2.602 y	β^+ 90.5%,EC 9.5%	-5.184	3+	3.2×10^4
		23	*100%*		-9.530	3/2+	0.43 m, 0.10 g
		24	15.02 h	β^-	-8.418	4+	
		24m	20.2 ms	IT,β^-(weak)	-7.945	1+	
		25	60 s	β^-	-9.357	5/2+	
		26	1.07 s	β^-	-6.888	3+	
		27	0.30 s	β^-,β^-n 0.08%	-5.63	3/2,5/2+	
		28	31 ms	β^-,β^-n 0.6%	-1.13	1+	
		29	43 ms	β^-,β^-n 15%	2.66		
		30	54 ms	β^-,β^-n 33%	8.38		
		31	17 ms	β^-,β^-n 30%	10.61		
		32	14.5 ms	β^-	16.41		
		33	0.02 s	β^-			
12	Mg	21	123 ms	β^+p	10.912	5/2+	
		22	3.86 s	β^+	-0.394	0+	
		23	11.3 s	β^+	-5.471	3/2+	
		24	*78.99%*		-13.931	0+	0.053 rs
		25	*10.00%*		-13.191	5/2+	0.18 rs
		26	*11.01%*		-16.212	0+	0.038
		27	9.46 m	β^-	-14.585	1/2+	0.15 rs
		28	21.0 h	β^-	-15.016	0+	
		29	1.4 s	β^-	-10.75	(3/2+)	
		30	1.2 s	β^-	-9.79 s	0+	
13	Al	23	0.47 s	β^+,β^+p	6.768		
		24	2.07 s	β^+,$\beta^+\alpha$ 0.0077%	-0.052	4+	
		24m	0.13 s	IT 93%,β^+ 7%,$\beta^+\alpha$	0.387	1+	
		25	7.18 s	β^+	-8.913	5/2+	
		26	7.2×10^5 y	β^+ 82%,EC 18%	-12.208	5+	
		26m	6.36 s	β^+,no γ	-11.979	0+	
		27	*100%*		-17.194	5/2+	0.231
		28	2.24 m	β^-	-16.848	3+	
		29	6.6 m	β^-	-18.212	5/2+	
		30	3.69 s	β^-	-15.89	(2,3)+	
		31	0.64 s	β^-	-15.10	5/2,3/2+	
14	Si	25	0.22 s	β^+,β^+p	3.824	3/2,5/2+	
		26	2.21 s	β^+	-7.143	0+	
		27	4.13 s	β^+	-12.385	5/2+	
		28	*92.23%*		-21.491	0+	0.17 rs
		29	*4.67%*		-21.894	1/2+	0.10 rs
		30	*3.10%*		-24.432	0+	0.108
		31	2.62 h	β^-	-22.949	3/2+	0.5 rs
		32	≈650 y	β^-,no γ	-24.092	0+	
		33	6.2 s	β^-	-20.57		
		34	2.8 s	β^-	-19.85	0+	
15	P	28	270 ms	β^+	-7.160	3+	
		29	4.1 s	β^+	-16.949	1/2+	
		30	2.50 m	β^+,EC	-20.204	1+	
		31	*100%*		-24.440	1/2+	0.18 rs
		32	14.28 d	β^-,no γ	-24.305	1+	
		33	25.3 d	β^-,no γ	-26.337	1/2+	
		34	12.4 s	β^-	-24.55	1+	
		35	47 s	β^-	-24.94	(1/2,3/2)+	
16	S	29	0.19 s	β^+,β^+p	-3.16	5/2+	
		30	1.2 s	β^+	-14.062	0+	
		31	2.6 s	β^+	-19.044	1/2+	
		32	*95.02%*		-26.015	0+	0.53 rs
		33	*0.75%*		-26.586	3/2+	0.09 rs, na
		34	*4.21%*		-29.931	0+	0.24 rs
		35	87.4 d	β^-,no γ	-28.846	3/2+	

TABLE OF NUCLIDES

Z	El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
16	S	36	*0.017%*		-30.666	0+	0.15 rs
		37	5.0 m	β^-	-26.908	5/2,7/2-	
		38	170 m	β^-	-26.862	0+	
17	Cl	32	298 ms	β^+,β^+p ≈0.007%, $\beta^+\alpha$ ≈0.01%	-13.329	1+	
		33	2.51 s	β^+	-21.003	3/2+	
		34	1.526 s	β^+,no γ	-24.438	0+	
		34m	32.0 m	β^+ 53%,IT 47%	-24.292	3+	
		35	*75.77%*		-29.014	3/2+	43
		36	3.00×10^5 y	β^- 98.1%,EC 1.9%, β^+ 0.0017%,no γ	-29.522	2+	<1 rs
		37	*24.23%*		-31.762	3/2+	0.428 g, 0.005 m
		38	37.3 m	β^-	-29.798	2-	
		38m	0.715 s	IT	-29.127	5-	
		39	56 m	β^-	-29.803	3/2+	
		40	1.35 m	β^-	-27.54	2-	
		40	0.10 s?	β^-?			
		41	34 s	β^-	-27.40	(1/2,3/2)+	
18	Ar	33	0.18 s	β^+,β^+p 34%	-9.385	1/2+	
		34	0.844 s	β^+	-18.379	0+	
		35	1.78 s	β^+	-23.049	3/2+	
		36	*0.337%*		-30.231	0+	5 rs
		37	35.0 d	EC,no γ	-30.948	3/2+	
		38	*0.063%*		-34.715	0+	0.8 rs
		39	269 y	β^-,no γ	-33.241	7/2-	600 rs
		40	*99.60%*		-35.040	0+	0.64
		41	1.83 h	β^-	-33.068	7/2-	0.5 rs
		42	33 y	β^-,no γ	-34.42	0+	
		43	5.4 m	β^-	-31.98		
		44	11.9 m	β^-	-32.271	0+	
19	K	36	0.34 s	β^+	-17.426	2+	
		37	1.23 s	β^+	-24.799	3/2+	
		38	7.61 m	β^+	-28.802	3+	
		38m	0.93 s	β^+,no γ	-28.671	0+	
		39	*93.26%*		-33.806	3/2+	2.1 rs
		40	*0.0117%* 1.28×10^9 y	β^- 89.3%,EC 10.7%, β^+ 0.0010%	-33.535	4-	70 rs
		41	*6.73%*		-35.560	3/2+	1.46
		42	12.36 h	β^-	-35.023	2-	
		43	22.3 h	β^-	-36.588	3/2+	
		44	22.1 m	β^-	-35.807	2-	
		45	20 m	β^-	-36.611	3/2+	
		46	115 s	β^-	-35.420	(2-)	
		47	17.5 s	β^-	-35.698	1/2+	
		48	6.8 s	β^-	-32.22	(2-)	
		49	≥2 s?	β^-			
		50	≈0.3 s?	β^-	-23.57 s		
20	Ca	37	0.173 s	β^+,β^+p	-13.164	3/2+	
		38	0.44 s	β^+	-22.060	0+	
		39	0.86 s	β^+,no γ	-27.282	3/2+	
		40	*96.94%*		-34.847	0+	0.4 rs
		41	1.0×10^5 y	EC,no γ	-35.138	7/2-	
		42	*0.647%*		-38.544	0+	0.7 rs
		43	*0.135%*		-38.405	7/2-	6 rs
		44	*2.09%*		-41.466	0+	0.88
		45	165 d	β^-	-40.810	7/2-	
		46	*0.0035%*		-43.138	0+	0.7 rs
		47	4.536 d	β^-	-42.343	7/2-	
		48	*0.187%*		-44.216	0+	1.1 rs
		49	8.72 m	β^-	-41.286	(3/2)-	
		50	14 s	β^-	-39.572	0+	
21	Sc	40	182 ms	β^+,β^+p	-20.527	4-	
		41	0.596 s	β^+,no γ	-28.644	7/2-	
		42	682 ms	β^+,no γ	-32.121	0+	
		42m	62.0 s	β^+	-31.503	7+	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
21	Sc	43	3.89 h	β^++EC	-36.185	7/2-	
		44	3.93 h	β^+ 95%,EC 5%	-37.811	2+	
		44m	2.44 d	IT 98.61%,EC 1.39%	-37.540	6+	
		45	*100%*		-41.066	7/2-	17^{rs}_{g} 9^{rs}_{m}
		45m	0.31 s	IT	-41.054	3/2+	
		46	83.80 d	β^-	-41.756	4+	8^{sc}
		46m	18.7 s	IT	-41.613	1-	
		47	3.42 d	β^-	-44.330	7/2-	
		48	43.7 h	β^-	-44.498	6+	
		48	3 h?	?			
		49	57.0 m	β^-	-46.555	(7/2)-	
		50	1.71 m	β^-	-44.539	(5)+	
		50m	0.35 s	IT	-44.282	(2)+	
		51	12.4 s	β^-	-43.220	(7/2)-	
22	Ti	41	80 ms	β^+p	-15.78	3/2+	
		42	0.20 s	β^+	-25.122	0+	
		43	0.49 s	β^+,no γ	-29.324		
		44	47 y	EC	-37.546	0+	
		45	3.09 h	β^+,EC	-39.004	7/2-	
		46	*8.2%*		-44.123	0+	0.6^{rs}
		47	*7.4%*		-44.931	5/2-	1.7^{rs}
		48	*73.7%*		-48.488	0+	7.9^{rs}
		49	*5.4%*		-48.559	7/2-	2.1^{rs}
		50	*5.2%*		-51.432	0+	0.179
		51	5.80 m	β^-	-49.733	3/2-	
		52	1.7 m	β^-	-49.469	0+	
		53	33 s	β^-	-46.84	(3/2)-	
23	V	44	0.09 s	[β^+],$\beta^+\alpha$	-23.85 s		
		46	0.423 s	β^+,no γ	-37.071	0+	
		47	32.6 m	β^++EC	-42.001	3/2-	
		48	15.976 d	EC 50.4%,β^+ 49.6%	-44.473	4+	
		49	330 d	EC,no γ	-47.957	7/2-	
		50	*0.250%*		-49.219	6+	50
		51	*99.750%*		-52.199	7/2-	4.88
		52	3.76 m	β^-	-51.439	3+	
		53	1.6 m	β^-	-51.863	7/2-	
		54	43 s	β^-	-49.93		
24	Cr	45	0.05 s	β^+p	-19.46	[7/2-]	
		46	0.26 s	β^+,no γ	-29.461	0+	
		48	21.56 h	EC	-42.818	0+	
		49	41.9 m	β^+,EC	-45.329	5/2-	
		50	*4.35%*		-50.258	0+	15.9
		51	27.70 d	EC	-51.448	7/2-	
		52	*83.79%*		-55.415	0+	0.8^{rs}
		53	*9.50%*		-55.284	3/2-	18^{rs}
		54	*2.36%*		-56.931	0+	0.38^{rs}
		55	3.55 m	β^-	-55.106	3/2-	
		56	5.9 m	β^-	-55.265	0+	
25	Mn	50	0.283 s	β^+,no γ	-42.626	0+	
		50m	1.74 m	β^+	-42.40	5+	
		51	46.2 m	β^++EC	-48.240	5/2-	
		52	5.59 d	EC 72%,β^+ 28%	-50.704	6+	
		52m	21.1 m	β^++EC 98.25%, IT 1.75%	-50.326	2+	
		53	3.7×10^6 y	EC,no γ	-54.687	7/2-	70^{rs}
		54	312 d	EC	-55.554	3+	$<10^{rs}$
		55	*100%*		-57.710	5/2-	13.3
		56	2.579 h	β^-	-56.909	3+	
		57	1.6 m	β^-	-57.487	5/2-	
		58	65 s	β^-	-55.802	3+	
		58	3.0 s	β^-,no γ	-55.832	(0+)	
26	Fe	49	0.07 s	[β^+],β^+p	-24.47		
		52	8.27 h	β^+ 57%,EC 43%	-48.332	0+	
		53	8.51 m	β^+,EC	-50.944	7/2-	
		53m	2.53 m	IT	-47.904	19/2-	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
26	Fe	54	*5.8%*		−56.251	0+	2.2 rs
		55	2.7 y	EC,no γ	−57.479	3/2−	
		56	*91.8%*		−60.604	0+	2.6 rs
		57	*2.15%*		−60.179	1/2−	2.4 rs
		58	*0.29%*		−62.152	0+	1.14
		59	44.6 d	β^-	−60.661	3/2−	
		60	3×10^5 y	β^-	−61.437	0+	
		61	6.0 m	β^-	−59.01	(3/2)−	
		62	68 s	β^-	−58.86	0+	
27	Co	53	0.26 s	β^+,no γ	−42.640	[7/2−]	
		53m	0.25 s	β^+ ≈98.5%,p ≈1.5%	−39.453	[19/2−]	
		54	193.2 ms	β^+,no γ	−48.010	0+	
		54m	1.46 m	β^+	−47.811	(7+)	
		55	17.5 h	β^+ 77%,EC 23%	−54.024	7/2−	
		56	78.8 d	EC 81%,β^+ 19%	−56.037	4+	
		57	271 d	EC	−59.342	7/2−	
		58	70.8 d	EC 85.00%,β^+ 15.00%	−59.844	2+	1.9×10^3
		58m	9.2 h	IT	−59.819	5+	1.4×10^5
		59	*100%*		−62.226	7/2−	$19\,^{m}_{g}$ $18\,^{m}_{g}$
		60	5.271 y	β^-	−61.647	5+	2.0 sc
		60m	10.5 m	IT 99.75%,β^- 0.25%	−61.588	2+	58 sc
		61	1.65 h	β^-	−62.897	7/2−	
		62(g)	1.50 m	β^-	−61.430	(2)+	
		62(m)	13.9 m	β^-	−61.408	(5)+	
		63	27.5 s	β^-	−61.850	7/2,5/2−	
		64	0.3 s	β^-	−59.791	(1+)	
28	Ni	53	0.05 s	[β^+],β^+p	−29.41	[7/2−]	
		56	6.10 d	EC	−53.902	0+	
		57	36.0 h	EC 60%,β^+ 40%	−56.077	3/2−	
		58	*68.3%*		−60.224	0+	4.6 rs
		59	7.5×10^4 y	EC 99+%, β^+ 1.5×10^{-5}%,no γ	−61.153	3/2−	92 a
		60	*26.1%*		−64.470	0+	2.8 rs
		61	*1.13%*		−64.219	3/2−	2 rs
		62	*3.59%*		−66.745	0+	14.2
		63	100 y	β^-,no γ	−65.513	1/2−	23 rs
		64	*0.91%*		−67.098	0+	1.49
		65	2.520 h	β^-	−65.124	5/2−	24 sc
		66	54.8 h	β^-,no γ	−66.021	0+	
		67	18 s	β^-	−63.47		
29	Cu	58	3.20 s	β^+	−51.662	1+	
		59	82 s	β^+	−56.352	3/2−	
		60	23.4 m	β^+ 93%,EC 7%	−58.343	2+	
		61	3.41 h	β^+ 62%,EC 38%	−61.981	3/2−	
		62	9.73 m	β^+ 97.8%,EC 2.2%	−62.796	1+	
		63	*69.2%*		−65.578	3/2−	4.4
		64	12.70 h	EC 41%,β^+ 19%, β^- 40%	−65.423	1+	
		65	*30.8%*		−67.262	3/2−	2.17
		66	5.10 m	β^-	−66.257	1+	140 sc
		67	61.9 h	β^-	−67.305	3/2−	
		68	31 s	β^-	−65.39	1+	
		68m	3.8 m	IT 86%,β^- 14%	−64.66	(6−)	
		69	3.0 m	β^-	−65.94	(3/2)−	
		70(g)	5 s	β^-	−63.39	1+	
		70(m)	47 s	β^-	−63.25	(5−)	
30	Zn	57	0.04 s	[β^+],β^+p	−32.61	[7/2−]	
		60	2.4 m	β^+ ≈97%,EC ≈3%	−54.184	0+	
		61	89.1 s	β^+ ≈99%,EC ≈1%	−56.58	3/2−	
		62	9.2 h	EC 93%,β^+ 7%	−61.169	0+	
		63	38.1 m	β^+ 93%,EC 7%	−62.211	3/2−	
		64	*48.6%*		−66.001	0+	0.78
		65	244.1 d	EC 98.54%,β^+ 1.46%	−65.910	5/2−	
		66	*27.9%*		−68.898	0+	1 rs

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
30	Zn	67	*4.10%*		-67.880	5/2-	7^{rs}
		68	*18.8%*		-70.006	0+	0.81^{g} 0.072^{m}
		69	56 m	β^-	-68.417	1/2-	
		69m	14.0 h	IT 99+%,β^- 0.033%	-67.978	9/2+	
		70	*0.62%*		-69.560	0+	0.09^{g} 0.0082^{m}
		71	2.4 m	β^-	-67.324	1/2-	
		71m	3.9 h	β^-	-67.167	(9/2)+	
		72	46.5 h	β^-	-68.134	0+	
		73	24 s	β^-	-65.03		
		74	95 s	β^-	-65.67	0+	
		75	10.2 s	β^-	-62.46 s		
		76	5.7 s	β^-	-62.55	0+	
		77	1.4 s	β^-	-58.91 s		
		79	2.6 s?	β^-n			
31	Ga	62	118 ms	β^+	-51.77 s	(0+)	
		63	32 s	β^+	-56.69	3/2,5/2-	
		64	2.62 m	β^++EC	-58.836	0+	
		65	15.2 m	β^+ 86%,EC 14%	-62.654	3/2-	
		66	9.4 h	β^+ 56.5%,EC 43.5%	-63.723	0+	
		67	78.3 h	EC	-66.878	3/2-	
		68	68.1 m	β^+ 90%,EC 10%	-67.085	1+	
		69	*60.1%*		-69.322	3/2-	1.7
		70	21.1 m	β^- 99.8%,EC 0.2%	-68.905	1+	
		71	*39.9%*		-70.142	3/2-	4.6
		72	14.10 h	β^-	-68.591	3-	
		73	4.87 h	β^-	-69.73	(3/2)-	
		74	8.1 m	β^-	-68.02	(4)-	
		74m	10 s	IT	-67.96	1+	
		75	2.10 m	β^-	-68.56	(3/2-)	
		76	27.1 s	β^-	-66.44	(3-)	
		77	13 s	β^-	-66.41 s		
		78	5.1 s	β^-	-63.68		
		79	3.0 s	β^-	-62.80		
		80	1.66 s	β^-,β^-n	-59.53 s		
		81	1.2 s	β^-,β^-n			
		82	0.60 s?	[β^-],β^-n			
		83	0.31 s	[β^-],β^-n			
32	Ge	64	64 s	β^++EC	-54.43	0+	
		65	31 s	β^++EC, (β^++EC)p 0.013%	-56.41	3/2,5/2-	
		66	2.3 h	EC 73%,β^+ 27%	-61.621	0+	
		67	19.0 m	β^+ 96%,EC 4%	-62.45	(1/2)-	
		68	288 d	EC,no γ	-66.972	0+	
		69	39.0 h	EC 64%,β^+ 36%	-67.096	5/2-	
		70	*20.5%*		-70.561	0+	3.2^{rs}
		71	11.2 d	EC,no γ	-69.906	1/2-	
		72	*27.4%*		-72.583	0+	1.0^{rs}_{g+m}
		73	*7.8%*		-71.294	9/2+	15^{rs}
		73m	0.50 s	IT	-71.227	1/2-	
		74	*36.5%*		-73.422	0+	0.4^{rs}_{g} 0.16^{rs}_{m}
		75	82.8 m	β^-	-71.856	1/2-	
		75m	48 s	IT 99.97%,β^- 0.03%	-71.716	7/2+	
		76	*7.8%*		-73.214	0+	0.10^{rs}_{m} 0.06^{rs}_{g}
		77	11.30 h	β^-	-71.214	7/2(+)	
		77m	53 s	β^- 80%,IT 20%	-71.055	1/2-	
		78	1.45 h	β^-	-71.76	0+	
		79	19 s?	β^-			
		79	42 s	β^-	-69.56	(1/2)-	
		80	29 s	β^-	-69.43	0+	
		81	10 s	β^-	-66.34 s		
		82	4.6 s	β^-	-65.99 s	0+	
		83	1.9 s	β^-	-≈62.5 s		

TABLE OF NUCLIDES

Z	El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
32	Ge	84	1.2 s	β^-		0+	
33	As	68	2.6 m	β^+	-58.77 s		
		69	15 m	β^+ 98%,EC 2%	-63.12	(5/2)-	
		70	53 m	β^+ 84%,EC 16%	-64.339	4(+)	
		71	61 h	EC 68%,β^+ 32%	-67.893	5/2-	
		72	26.0 h	β^+ 77%,EC 23%	-68.232	2-	
		73	80.3 d	EC	-70.949	3/2-	
		74	17.78 d	EC 37%,β^+ 31%, β^- 32%	-70.860	2-	
		75	*100%*		-73.034	3/2-	4.4
		76	26.3 h	β^-	-72.291	2-	
		77	38.8 h	β^-	-73.916	3/2-	
		78	91 m	β^-	-72.74	(2-)	
		79	9.0 m	β^-	-73.71	3/2-	
		80	16 s	β^-	-72.06	1(+)	
		81	33 s	β^-	-72.64	(3/2)-	
		82	14 s	β^-		(5-)	
		82	19 s	β^-	-70.39	(1+)	
		83	13 s	β^-	-69.87		
		84	0.6 s	β^-	-66.16 s		
		84	5.3 s	β^-,β^-n 0.1%	-66.16 s	(1-)	
		85	2.03 s	β^-,β^-n 23%	-63.52 s		
		86	0.9 s	β^-,β^-n ≈4%	-59.7 s		
		87	0.6 s	β^-	≈-56.2 s		
34	Se	68	1.6 m	β^+	-54.17 s	0+	
		69	27.4 s	β^+,β^+p 0.07%	-56.30		
		70	41.1 m	β^++EC	-61.74 s	0+	
		70m	4 m?	β^++EC			
		71	4.9 m	β^++EC	-63.46	(5/2)-	
		72	8.4 d	EC	-67.894	0+	
		73	7.1 h	β^+ ≈65%,EC ≈35%	-68.209	7/2+	
		73m	41 m	IT 73%,(β^+,EC) 27%	-68.183	1/2-	
		74	*0.87%*		-72.213	0+	52
		75	118.5 d	EC	-72.169	5/2+	
		76	*9.0%*		-75.259	0+	64_g 21^{rs}_m
		77	*7.6%*		-74.606	1/2-	42^{rs}
		77m	17.4 s	IT	-74.444	7/2+	
		78	*23.5%*		-77.032	0+	0.4_{g+m} 0.3^{rs}_m
		79	≤6.5×10^4 y	β^-,no γ	-75.911	7/2+	
		79m	3.90 m	IT	-75.815	1/2-	
		80	*49.8%*		-77.761	0+	0.6_g 0.07_m
		81	18.5 m	β^-	-76.391	(1/2)-	
		81m	57.3 m	IT 99+%,β^- 0.058%	-76.288	(7/2)+	
		82	*9.2%* 1.4×10^{20} y	$\beta^-\beta^-$	-77.586	0+	0.04_m 0.006_g
		83	22.5 m	β^-	-75.333	(9/2)+	
		83m	70 s	β^-	-75.105	(1/2)-	
		84	3.3 m	β^-	-75.942	0+	
		85	31 s	β^-	-72.57 s		
		85	19 s?	β^-			
		86	16 s	β^-	-70.86 s	0+	
		87	5.8 s	β^-,β^-n 0.16%	≈-66.2 s		
		88	1.5 s	β^-,β^-n 0.8%	-64.09 s	0+	
		89	0.41 s	[β^-],β^-n 5%	-59.89 s		
		91	0.27 s	β^-,β^-n ≈21%			
35	Br	70	23 s?	β^+p	-51.29 s		
		71	<1 m?	β^++EC	-56.86 s		
		72	1.31 m	β^+	-58.93 s	(3)	
		73	3.4 m	β^++EC	-63.67	(3/2-)	
		74	25.3 m	β^++EC	-65.295	(0,1-)	
		74	4 m?	β^+			
		74m	41 m	β^++EC	≈-65.1	(4-)	
		75	98 m	β^+ 76%,EC 24%	-69.159	(3/2-)	
		76	16.1 h	β^+ 57%,EC 43%	-70.303	1-	

TABLE OF NUCLIDES

Z	Nuclide El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
35	Br	77	57.0 h	EC 99.26%,β^+ 0.74%	-73.242	3/2-	
		77m	4.3 m	IT	-73.136	9/2+	
		78	6.46 m	β^+ 92%,EC 8%, β^- ≤0.01%	-73.458	1+	
		79	*50.69%*		-76.070	3/2-	10.8_g 2.4_m
		79m	4.9 s	IT	-75.863	9/2+	
		80	17.6 m	β^- 91.7%, EC 5.7%,β^+ 2.6%	-75.891	1+	
		80m	4.42 h	IT	-75.805	5-	
		81	*49.31%*		-77.976	3/2-	2.7_{g+m}
		82	35.34 h	β^-	-77.498	5-	
		82m	6.1 m	IT 97.6%,β^- 2.4%	-77.452	2-	
		83	2.39 h	β^-	-79.025	(3/2)-	
		84	31.8 m	β^-	-77.759	2-	
		84m	6.0 m	β^-	-77.46	(6-)	
		85	2.9 m	β^-	-78.67	3/2-	
		86	56 s	β^-	-75.96	(2-)	
		86	4.5 s?	[IT]			
		87	55.6 s	β^-,β^-n 2.3%	-74.21 s	(3/2-)	
		88	16.6 s	β^-,β^-n 6%	-71.09 s	(1-)	
		89	4.4 s	β^-,β^-n 13%	-69.09 s		
		90	1.9 s	β^-,β^-n 23%	-≈65.2 s		
		91	0.54 s	β^-,β^-n 9%			
		92	0.36 s	β^-,β^-n 16%	-≈57.8 s		
36	Kr	72	17 s	β^++EC	-53.87 s	0+	
		73	27 s	β^+,β^+p 0.7%	-56.98		
		74	11.5 m	β^+,EC	-62.02	0+	
		75	4.3 m	β^++EC	-64.16 s		
		76	14.8 h	EC	-69.10	0+	
		77	75 m	β^+ ≈80%,EC ≈20%	-70.236	(5/2+)	
		78	*0.356%*		-74.150	0+	5_g 0.21_m
		79	35.0 h	EC 93%,β^+ 7%	-74.439	1/2-	
		79m	50 s	IT	-74.309	7/2+	
		80	*2.27%*		-77.897	0+	12_g 5_m
		81	2.1×10^5 y	EC	-77.654	7/2+	
		81m	13 s	IT	-77.464	1/2-	
		82	*11.6%*		-80.591	0+	23_g 20_m
		83	*11.5%*		-79.985	9/2+	200
		83m	1.83 h	IT	-79.943	1/2-	
		84	*57.0%*		-82.432	0+	0.09_m 0.042_g
		85	10.7 y	β^-	-81.472	9/2+	1.7
		85m	4.48 h	β^- 79%,IT 21%	-81.167	1/2-	
		86	*17.3%*		-83.263	0+	0.06 rs
		87	76 m	β^-	-80.707	(5/2)+	
		88	2.84 h	β^-	-79.689	0+	
		89	3.18 m	β^-	-76.79		
		90	32.3 s	β^-	-75.18	0+	
		91	8.6 s	β^-	-71.77		
		92	1.84 s	β^-,β^-n 0.032%	-69.15	0+	
		93	1.29 s	β^-,β^-n 1.9%	-65.6		
		94	0.20 s	β^-,β^-n 6%	-≈61.32 s	0+	
		95	0.78 s	[β^-]			
37	Rb	74	65 ms	β^+,no γ	-51.43 s	(0+)	
		75	18 s	β^+	-57.51		
		76	39 s	β^+	-60.61		
		77	3.9 m	β^++EC	-65.11	(5/2-)	
		78	18 m	β^++EC	-68.8		
		78m	6 m	β^++EC,IT	-68.7		
		79	23.0 m	β^+ 84%,EC 16%	-70.86	(3/2,5/2-)	
		80	34 s	β^+	-72.190	1+	
		81	4.58 h	EC 73%,β^+ 27%	-75.392	3/2-	
		81m	32 m	β^++EC,IT	-75.307	9/2+	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
37	Rb	82	1.25 m	β^+ 96%,EC 4%	−76.213	1+	
		82m	6.2 h	EC 74%,β^+ 26%	−≈76.1	5−	
		83	86.2 d	EC	−78.914	5/2−	
		84	32.9 d	EC 75%,β^+ 22%, β^- 3.0%	−79.752	2−	12^{rs}_{np}
		84m	20.5 m	IT	−79.288	(6+)	
		85	*72.17%*		−82.159	5/2−	0.40_g 0.047_m
		86	18.8 d	β^- 99+%,EC 0.005%	−82.738	2−	
		86m	1.02 m	IT	−82.182	6−	
		87	*27.83%* 4.8×10^{10} y	β^-,no γ	−84.596	3/2−	0.12^{rs}
		88	17.8 m	β^-	−82.602	2−	1.0^{rs}
		89	15.2 m	β^-	−81.717	(3/2−)	
		90	153 s	β^-	−79.57	(1−)	
		90m	258 s	β^-,IT	−79.46	(4−)	
		91	58 s	β^-	−77.97		
		92	4.52 s	β^-,β^-n 0.012%	−75.12	(1−)	
		93	5.85 s	β^-,β^-n 1.3%	−72.92		
		94	2.72 s	β^-,β^-n 10%	−68.82		
		95	0.38 s	β^-,β^-n 8.4%	−66.55		
		96	0.201 s	β^-,β^-n 13%	−62.77 s		
		97	0.170 s	β^-,β^-n 27%			
		98	0.13 s	β^-,β^-n 13%			
		99	76 ms	[β^-]			
38	Sr	77	9 s	β^+,β^+p ≤0.25%	−57.96		
		78	31 m	β^++EC	−65.5 s	0+	
		79	8.1 m	β^++EC	−65.46 s		
		79	4 m?	β^++EC			
		80	106 m	EC+β^+	−70.39 s	0+	
		81	26 m	β^+ ≈87%,EC ≈13%	−71.40	(1/2−)	
		82	25.0 d	EC,no γ	−75.999	0+	
		83	32.4 h	EC 76%,β^+ 24%	−76.664	7/2+	
		83m	5.0 s	IT	−76.405	1/2−	
		84	*0.56%*		−80.641	0+	0.6^{sc}_m 0.3_g
		85	64.8 d	EC	−81.095	9/2+	
		85m	68 m	IT 87%,EC 13%	−80.856	1/2−	
		86	*9.8%*		−84.512	0+	0.84^{sc}_m
		87	*7.0%*		−84.869	9/2+	
		87m	2.80 h	IT 99.7%,EC 0.3%	−84.480	1/2−	
		88	*82.6%*		−87.911	0+	0.0057^{rs}
		89	50.5 d	β^-	−86.203	5/2+	0.42^{rs}
		90	28.8 y	β^-,no γ	−85.935	0+	0.8^{rs}
		91	9.5 h	β^-	−83.666	5/2+	
		92	2.71 h	β^-	−82.892	0+	
		93	7.4 m	β^-	−80.28		
		94	75 s	β^-	−78.96	0+	
		95	24.4 s	β^-	−75.14		
		96	1.1 s	β^-	−73.07	0+	
		97	0.40 s	β^-	−69.08 s		
		98	0.7 s	β^-	−67.38 s	0+	
		99	0.6 s	β^-,β^-n 3%			
39	Y	81	5 m	β^++EC			
		82	12 m?	[β^+]	−67.91 s		
		83	7.1 m	β^+ ≈95%,EC ≈5%	−72.36 s	(9/2+)	
		83	2.85 m	β^++EC	−72.36 s	(1/2)−	
		84	39 m	β^++EC	−73.692		
		84	4.6 s	β^++EC		(1+)	
		85(g)	2.7 h	β^+ 55%,EC 45%	−77.855	(1/2)−	
		85(m)	4.9 h	β^+ 70%,EC 30%	−77.835	(9/2)+	
		86	14.74 h	EC 66%,β^+ 34%	−79.239	4−	
		86m	48 m	IT 99.31%, β^++EC 0.69%	−79.021	8+	
		87	80.3 h	EC 99.8%,β^+ 0.2%	−83.007	1/2−	
		87m	13 h	IT 98%, EC ≈2%,β^+ 0.75%	−82.626	9/2+	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
39	Y	88	106.6 d	EC 99+%,β^+ 0.210%	-84.298	4-	
		89	*100%*		-87.695	1/2-	$^{1.2\,g}_{0.0010\,m}$
		89m	16.1 s	IT	-86.786	9/2+	
		90	64.1 h	β^-	-86.481	2-	$<6.5^{rs}_{g}$
		90m	3.19 h	IT 99+%,β^- 0.0021%	-85.799	7+	
		91	58.5 d	β^-	-86.350	1/2-	1.4^{rs}
		91m	49.7 m	IT	-85.794	9/2+	
		92	3.54 h	β^-	-84.822	2-	
		93	10.2 h	β^-	-84.227	1/2-	
		93m	0.82 s	IT	-83.468	9/2+	
		94	18.7 m	β^-	-82.382	2-	
		95	10.3 m	β^-	-81.233	(1/2)-	
		96	9.8 s	β^-			
		96	6.0 s	β^-	-78.43	(0-)	
		97(g)	3.7 s	β^-	-76.28	(1/2-)	
		97(m)	1.21 s	β^- ≥99.3%, IT(?) ≤0.7%	-75.61	(9/2)+	
		98	0.6 s	β^-	-73.19 s	(1+)	
		98	2.0 s	β^-	-73.19 s		
		99	1.4 s	β^-,β^-n 1%	-71.50		
		100	0.8 s	β^-	-67.96 s		
		102	0.9 s?	[β^-]	-63.36 s		
40	Zr	81	≈11 m	[β^+]			
		82	10 m	[β^++EC]		0+	
		83	≈8 m	[β^+]	-≈65.4 s		
		83	0.7 m	β^+	-≈65.4 s		
		84	5 m	EC+β^+	-71.44 s	0+	
		85	7.9 m	β^++EC	-73.16 s		
		85	1.4 h?	[β^++EC]			
		85m	10.9 s	IT,β^++EC	-72.87 s		
		86	16.5 h	EC	-77.94 s	0+	
		87	1.6 h	β^+,EC	-79.43	(9/2+)	
		87m	14 s	IT	-79.09	(1/2-)	
		88	83.4 d	EC	-83.621	0+	
		89	78.4 h	EC 77.7%,β^+ 22.3%	-84.860	9/2+	
		89m	4.18 m	IT 93.8%, EC 4.7%,β^+ 1.5%	-84.272	1/2-	
		90	*51.5%*		-88.765	0+	0.03^{rs}
		90m	809 ms	IT	-86.446	5-	
		91	*11.2%*		-87.892	5/2+	1.1^{rs}
		92	*17.1%*		-88.456	0+	0.2^{rs}
		93	1.5×10^6 y	β^-	-87.117	5/2+	1^{rs}
		94	*17.4%*		-87.264	0+	0.06
		95	64.0 d	β^-	-85.663	5/2+	
		96	*2.80%*		-85.445	0+	0.020
		97	16.9 h	β^-	-82.954	1/2+	
		98	31 s	β^-,no γ	-81.292	0+	
		99	2.1 s	β^-	-77.89	(1/2+)	
		100	7.1 s	β^-	-76.60	0+	
		101	2.0 s	β^-	-73.05 s		
		102	2.9 s	β^-	-72.36 s	0+	
41	Nb	86	1.4 m	β^+	-69.34 s		
		87	2.6 m	β^++EC	-74.43 s	(9/2+)	
		87	3.9 m	β^++EC	-74.43 s	(1/2-)	
		88	7.8 m	β^++EC	-76.42 s	(4-)	
		88	14.3 m	β^++EC	-76.42 s	(8+)	
		89	2.0 h	β^++EC	-80.621	(9/2+)	
		89	66 m	EC 74%,β^+ 26%	-80.621	(1/2)-	
		90	14.6 h	β^+ 53%,EC 47%	-82.654	8+	
		90m	18.8 s	IT	-82.529	4-	
		91	long	[EC]	-86.637	9/2+	
		91m	62 d	IT 96.6%,EC 3.4%	-86.532	1/2-	
		92	*≈2×10⁻¹¹%* 3.2×10^7 y	EC	-86.448	7+	
		92m	10.15 d	EC 99.94%,β^+ 0.06%	-86.313	2+	
		93	*100%*		-87.209	9/2+	1.1_{g+m}
		93m	13.6 y	IT	-87.179	1/2-	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
41	Nb	94	2.0×10^4 y	β^-	-86.367	6+	15^{sc}_{g} 0.59^{rs}_{m}
		94m	6.26 m	IT 99.5%,β^- 0.5%	-86.326	3+	
		95	35.0 d	β^-	-86.786	9/2+	$<7^{rs}$
		95m	87 h	IT 97.5%,β^- 2.5%	-86.552	1/2-	
		96	23.4 h	β^-	-85.608	(6)+	
		97	72 m	β^-	-85.612	9/2+	
		97m	1.0 m	IT	-84.868	1/2-	
		98	2.9 s	β^-	-83.530	1+	
		98m	51 m	β^-	-83.446	(5+)	
		99	15.0 s	β^-	-82.346	(9/2)+	
		99m	2.6 m	β^-,IT?(weak)	-81.981	(1/2)-	
		100	1.5 s	β^-	-79.96		
		100	3.1 s	β^-			
		101	7.0 s	β^-	-78.95		
		101	1.0 m?	β^-			
		102	4.3 s	β^-	-76.36 s		
		102	1.3 s	β^-	-76.36 s		
		103	1.5 s	β^-	-75.41 s		
		104	0.8 s	β^-	-72.65 s		
		104	4.8 s	β^-			
		105	2 s	[β^-]	-≈70.14 s		
		106	≈1 s	β^-			
42	Mo	88	27 m?	β^++EC	-72.92 s		
		88	8 m	β^++EC	-72.92 s		
		90	5.67 h	EC 75%,β^+ 25%	-80.167	0+	
		91	15.49 m	β^+ 94.1%,EC 5.9%	-82.199	9/2+	
		91m	65 s	(β^+,EC) 50%,IT 50%	-81.546	1/2-	
		92	*14.8%*		-86.807	0+	0.3^{rs}_{a}
		93	3×10^3 y	EC	-86.803	5/2+	
		93m	6.9 h	IT 99.88%,EC 0.12%	-84.378	21/2+	
		94	*9.3%*		-88.412	0+	
		95	*15.9%*		-87.712	5/2+	14^{rs}
		96	*16.7%*		-88.795	0+	1^{rs}
		97	*9.6%*		-87.544	5/2+	2^{rs}
		98	*24.1%*		-88.115	0+	0.13
		99	66.02 h	β^-	-85.970	1/2+	
		100	*9.6%*		-86.189	0+	0.20
		101	14.6 m	β^-	-83.516	1/2+	
		102	11.0 m	β^-	-83.562	0+	
		103	60 s	β^-	-80.61 s		
		104	1.0 m	β^-	-81.65 s	0+	
		105	36 s	β^-	-77.14 s		
		106	9.5 s	β^-	-≈76.1 s	0+	
		107	≈5 s	β^-			
		108	1.1 s	β^-	-≈70.9 s	0+	
43	Tc	90	50 s	β^+			
		90	7.9 s	β^+	-71.3	(1+)	
		91	3.14 m	β^++EC	-75.98	(9/2+)	
		91	3.3 m	β^++EC		(1/2)-	
		92	4.4 m	β^++EC	-78.936	(8)+	
		93	2.7 h	EC 87%,β^+ 13%	-83.610	9/2+	
		93m	43 m	IT 80%,EC 20%	-83.217	1/2-	
		94	293 m	EC 89%,β^+ 11%	-84.156	7+	
		94m	52 m	β^+ 72%,EC 28%	-84.081	(2)+	
		95	20.0 h	EC	-86.013	9/2+	
		95m	61 d	EC 95.8%,β^+ 0.31%, IT 3.9%	-85.974	1/2-	
		96	4.3 d	EC	-85.821	7+	
		96m	52 m	IT 98%,EC 2%, β^+ ≈0.01%	-85.787	4+	
		97	2.6×10^6 y	EC,no γ	-87.224	9/2+	
		97m	90 d	IT	-87.128	1/2-	
		98	4.2×10^6 y	β^-	-86.434	(6)+	3^{rs}_{m}
		99	2.14×10^5 y	β^-	-87.326	9/2+	19
		99m	6.02 h	IT 99+%,β^- ≧9×10^{-5}%	-87.184	1/2-	
		100	15.8 s	β^-	-86.019	1+	

TABLE OF NUCLIDES

Z	El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
43	Tc	101	14.3 m	β^-	−86.327	9/2+	
		102	5.3 s	β^-	−84.60 s	1+	
		102m	4.4 m	β^- ≈98%,IT ≈2%	−≈84.3 s	(5)	
		103	50 s	β^-	−84.91		
		104	18.1 m	β^-	−83.85	(3)	
		105	7.6 m	β^-	−82.54		
		106	36 s	β^-	−80.03 s		
		107	21.2 s	β^-	−79.51 s		
		108	5.1 s	β^-	−≈75.8 s		
		109	1.4 s	β^-			
		110	0.82 s	β^-	−≈71 s		
44	Ru	92	3.7 m	β^++EC	−≈74.7 s	0+	
		93	60 s	β^++EC	−77.31 s	(9/2)+	
		93m	10.8 s	β^++EC 79%,IT 21%	−76.58 s	(1/2)−	
		94	52 m	EC	−82.571	0+	
		95	1.65 h	EC 85%,β^+ 15%	−83.452	5/2+	
		96	*5.5%*		−86.075	0+	0.25
		97	2.88 d	EC	−86.07	5/2+	
		98	*1.86%*		−88.226	0+	$<8^{rs}$
		99	*12.7%*		−87.620	5/2+	4
		100	*12.6%*		−89.222	0+	6
		101	*17.0%*		−87.952	5/2+	5
		102	*31.6%*		−89.100	0+	1.3
		103	39.4 d	β^-	−87.261	5/2+	
		104	*18.7%*		−88.099	0+	0.47
		105	4.44 h	β^-	−85.938	(3/2+)	0.30
		106	367 d	β^-,no γ	−86.333	0+	0.12
		107	4.2 m	β^-	−83.71		
		108	4.5 m	β^-	−83.82	0+	
		109	34 s	β^-	−80.81 s		
		109	13 s	β^-	−80.81 s		
		110	16 s	β^-	−≈80.3 s	0+	
		111	1.5 s	β^-			
		111	≈1 m?	[β^-]			
		112	0.7 s?	[β^-]		0+	
45	Rh	94	25 s	β^+			
		94	80 s	β^+			
		95	5.0 m	β^++EC	−78.34	(9/2)+	
		95m	1.96 m	IT 88%,β^++EC 12%	−77.80	(1/2)−	
		96	9.9 m	β^++EC	−79.633	(5+)	
		96m	1.51 m	IT 60%,β^++EC 40%	−79.581	(2+)	
		97	31 m	β^+,EC	−82.56	(9/2)+	
		97m	44 m	(β^+,EC) 95%,IT 5%	−82.30	(1/2)−	
		97	1 m?	?			
		98(g)	8.7 m	β^+,EC	−83.168	(2+)	
		98(m)	3.5 m	β^++EC	−83.162	(5+)	
		99	15.0 d	EC 97.4%,β^+ 2.6%	−85.517	(1/2−)	
		99m	4.7 h	EC ≈90%,β^+ ≈10%	−85.452	9/2+	
		100	20.8 h	EC 95%,β^+ 5%	−85.592	1−	
		100m	4.7 m	IT 93%,EC+β^+ 7%	−85.252	(5+)	
		101	3.3 y	EC	−87.410	1/2−	
		101m	4.34 d	EC 92.8%,IT 7.2%	−87.253	9/2+	
		102	2.9 y	EC		(6+)	
		102m	206 d	EC 62%,β^+ 14%, β^- 19%,IT 5%	−86.777	(2−)	
		103	*100%*		−88.024	1/2−	$^{134}_{11\,m}{}^{g}$
		103m	56.1 m	IT	−87.984	7/2+	
		104	42.3 s	β^- 99.6%,EC 0.4%	−86.952	1+	40^{rs}_{g+m}
		104m	4.34 m	IT 99.87%,β^- 0.13%	−86.823	5+	800^{rs}_{g+m}
		105	35.4 h	β^-	−87.855	(7/2)+	$1.1\times10^{4}{}_{g}$ $5\times10^{3}{}_{m}$
		105m	45 s	IT	−87.725	1/2−	
		106	29.8 s	β^-	−86.372	1+	
		106m	130 m	β^-	−86.235	4,5,6+	
		107	21.7 m	β^-	−86.86	(5/2)+	
		108	16.8 s	β^-	−85.02	1+	

TABLE OF NUCLIDES

Z	El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
45	Rh	108	6.0 m	β^-	−85.09		
		109	80 s	β^-	−85.11 s	(5/2,3/2)+	
		110	3 s	β^-	−82.8		
		110	28 s	β^-	−82.93		
		111	11 s	[β^-]	−82.53 s		
		112	4.6 s	β^-	−80.3 s		
		113	0.9 s	[β^-]			
		114	1.7 s?	β^-			
46	Pd	97	3.3 m	β^++EC	−77.76 s		
		98	18 m	EC+β^+	−81.27 s	0+	
		99	21.4 m	β^+,EC	−86.112	(5/2+)	
		100	3.6 d	EC	−85.230	0+	
		101	8.5 h	EC 93.6%,β^+ 6.4%	−85.428	(5/2)+	
		102	*1.0%*		−87.925	0+	5^{rs}
		103	17.0 d	EC	−87.478	5/2+	
		104	*11.0%*		−89.400	0+	
		105	*22.2%*		−88.422	5/2+	
		106	*27.3%*		−89.913	0+	0.28_g 0.013_m
		107	6.5×10^6 y	β^-,no γ	−88.371	5/2+	
		107m	21.3 s	IT	−88.156	11/2−	
		108	*26.7%*		−89.523	0+	11^{rs}_g 0.19^{rs}_m
		109	13.43 h	β^-	−87.606	5/2+	
		109m	4.69 m	IT	−87.417	11/2−	
		110	*11.8%*		−88.335	0+	0.36^{rs}_g 0.02^{rs}_m
		111	22 m	β^-	−86.03	(5/2+)	
		111m	5.5 h	IT 71%,β^- 29%	−85.86	(11/2−)	
		112	21.1 h	β^-	−86.326	0+	
		113	1.5 m	β^-,no γ	−83.64 s		
		114	2.4 m	β^-,no γ	−83.76 s	0+	
		115	37 s	β^-			
		116	14 s	β^-	−≈80.12 s	0+	
		117	5 s	[β^-]			
		118	3.1 s	β^-	−76.21 s	0+	
47	Ag	99	1.8 m?	β^++EC	−76.51 s		
		100	2.3 m	β^++EC	−77.93		
		100	8 m?	β^++EC			
		101	10.8 m	β^++EC	−81.33 s	(9/2+)	
		102	13.0 m	β^+ ≈68%,EC ≈32%	−82.33	5+	
		102m	7.7 m	(β^+,EC) 51%,IT 49%	−82.32	2+	
		103	1.10 h	EC ≈58%,β^+ ≈42%	−84.80	7/2+	
		103m	5.7 s	IT	−84.67	(1/2)−	
		104	69 m	β^+,EC	−85.150	5+	
		104m	33 m	(β^+,EC) 67%,IT 33%		2+	
		105	41.3 d	EC 99+%,β^+ 9×10^{-4}%	−87.075	1/2−	
		105m	7.2 m	IT 99.7%,EC 0.3%	−87.049	(7/2)+	
		106	24.0 m	(EC,β^+) ≥99%, β^-? ≤1%	−86.929	1+	
		106m	8.5 d	EC	−86.841	6+	
		107	*51.83%*		−88.404	1/2−	37_g 0.3^{sc}_m
		107m	44.3 s	IT	−88.311	7/2+	
		108	2.4 m	β^- 97.7%,EC 2.1%, β^+ 0.24%	−87.602	1+	
		108m	127 y	EC+β^+ 91%,IT 9%	−87.492	6+	
		109	*48.17%*		−88.722	1/2−	88_g 4_m
		109m	39.8 s	IT	−88.634	7/2+	
		110	24.4 s	β^- 99.7%,EC 0.3%	−87.456	1+	
		110m	252 d	β^- 98.5%,IT 1.5%	−87.338	6+	80_{g+m}
		111	7.45 d	β^-	−88.226	1/2−	3^{rs}
		111m	65 s	IT 99.7%,β^- 0.3%	−88.166	(7/2+)	
		112	3.14 h	β^-	−86.620	2(−)	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
47	Ag	113	1.15 m	β^-	-86.82		
		113	5.37 h	β^-	-87.040	1/2(-)	
		114	4.5 s	β^-	-85.16	1+	
		115	18 s	β^-			
		115	20 m	β^-	-84.91	(1/2-)	
		116	2.68 m	β^-	-82.62 s		
		116m	10.5 s	β^- ≈98%,IT ≈2%	-82.54 s		
		117	1.21 m	β^-	-82.24		
		117	5.3 s	β^-	-82.24		
		118	3.7 s	β^-	-80.21 s		
		118m	2.8 s	β^- 59%,IT 41%	-80.08 s		
		119	2.1 s	β^-	-79.31 s	(7/2+)	
		120	1.2 s	β^-	-≈78.0 s	(3+)	
		120m	0.32 s	β^- ≈63%,IT ≈37%	-≈77.8 s	(6-)	
		121	≤3 s	[β^-]			
		122	1.5 s	[β^-]	-≈70.5 s		
		123	0.39 s	[β^-],β^-n			
48	Cd	100	1.1 m	β^++EC	-73.43 s	0+	
		101	1.2 m	β^++EC	-75.53 s		
		102	5.5 m	EC,β^+	-79.43 s	0+	
		103	7.3 m	β^+,EC	-80.60		
		104	58 m	EC 99.2%,β^+ 0.8%	-83.57	0+	
		105	56.0 m	EC,β^+	-84.336	5/2+	
		106	*1.25%*		-87.131	0+	1^{rs}
		107	6.50 h	EC 99.77%,β^+ 0.23%	-86.987	5/2+	
		108	*0.89%*		-89.251	0+	1.2^{rs}
		109	453 d	EC	-88.540	5/2+	700^{rs}
		110	*12.5%*		-90.349	0+	11^{rs}_{g} 0.10^{rs}_{m}
		111	*12.8%*		-89.254	1/2+	24^{rs}
		111m	48.6 m	IT	-88.858	11/2-	
		112	*24.1%*		-90.578	0+	2^{rs}_{g}
		113	*12.2%* 9×10^{15} y	β^-,no γ	-89.050	1/2+	1.98×10^{4}
		113m	14 y	β^- 99.9%,IT 0.1%	-88.787	11/2-	
		114	*28.7%*		-90.020	0+	0.30^{sc}_{g} 0.04^{sc}_{m}
		115	53.4 h	β^-	-88.093	1/2+	
		115m	44.8 d	β^-	-87.920	11/2-	
		116	*7.5%*		-88.718	0+	0.05^{sc}_{g} 0.025^{sc}_{m}
		117	2.4 h	β^-	-86.416	1/2+	
		117m	3.4 h	β^-	-86.29	11/2-	
		118	50.3 m	β^-,no γ	-86.707	0+	
		119	2.7 m	β^-	-84.23	1/2+	
		119m	1.9 m	β^-	-84.08	11/2-	
		120	50.8 s	β^-	-83.98?	0+	
		121	12.8 s	β^-	-≈81.3 s		
		121	4.8 s	β^-	-≈81.3 s		
		122	5.8 s	β^-	-≈80.0 s	0+	
		124	0.9 s	β^-	-≈76.4 s	0+	
49	In	104	1.5 m	β^++EC	-75.57 s		
		105	5.1 m	β^++EC	-79.34 s		
		105m	55 s?	IT?			
		106	5.3 m	β^++EC	-80.586	(3)	
		106	6.3 m	β^++EC			
		107	32.4 m	EC 65%,β^+ 35%	-83.50	9/2+	
		107m	50 s	IT	-82.82	1/2-	
		108	40 m	EC,β^+	-84.10	3+	
		108	58 m	EC,β^+	-84.13	(5,6+)	
		109	4.2 h	EC 94%,β^+ 6%	-86.524	9/2+	
		$109m_1$	1.3 m	IT	-85.874	1/2-	
		$109m_2$	0.21 s	IT	-84.41	(19/2+)	
		110	4.9 h	EC		7+	
		110	69 m	β^+,EC	-86.409	2+	
		111	2.83 d	EC	-88.405	9/2+	

TABLE OF NUCLIDES

Z	Nuclide El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
49	In	111m	7.6 m	IT	-87.869	1/2-	
		112	14.4 m	β^- 44%,EC 34%, β^+ 22%	-88.000	1+	
		112m	20.9 m	IT	-87.845	4+	
		113	*4.3%*		-89.372	9/2+	5_m 3_g
		113m	99.5 m	IT	-88.980	1/2-	
		114	71.9 s	β^- 98.1%,EC 1.9%, β^+ 0.004%	-88.576	1+	
		114m	49.51 d	IT 96.7%,EC 3.3%	-88.386	5+	
		115	*95.7%* 5.1×10^{14} y	β^-,no γ	-89.541	9/2+	91_{m2} 70_{m1} 41_g
		115m	4.49 h	IT 95%,β^- 5%	-89.205	1/2-	
		116	14.10 s	β^-	-88.253	1+	
		$116m_1$	54.1 m	β^-	-88.126	5+	
		$116m_2$	2.16 s	IT	-87.963	8-	
		117	42 m	β^-	-88.944	9/2+	
		117m	1.93 h	β^- 53%,IT 47%	-88.629	1/2-	
		118	5.0 s	β^-	-87.45	1+	
		118	4.4 m	β^-	-87.37	(5)+	
		118	8.5 s	IT 98.5%,β^- 1.5%	-87.23	(8)-	
		119	2.1 m	β^-	-87.730	9/2+	
		119m	18.0 m	β^- 95%,IT 5%	-87.419	1/2-	
		120	44 s	β^-	-85.8	(5)+	
		120	3.0 s	β^-	-85.5	1+	
		121	30.0 s	β^-	-85.842	9/2+	
		121m	3.8 m	β^- 98.8%,IT 1.2%	-85.528	1/2-	
		122	9.2 s	β^-	-83.4		
		122	1.5 s	β^-	-83.5	(1+)	
		123(g)	6.0 s	β^-	-83.44	(9/2)+	
		123(m)	48 s	β^-	-83.12	(1/2)-	
		124	2.4 s	β^-			
		124	3.2 s	β^-	-81.10	(2+)	
		125	2.32 s	β^-	-80.50	(9/2)+	
		125	12.2 s	β^-			
		126	1.53 s	β^-	-77.90		
		127	1.3 s	β^-	-77.36		
		127	3.7 s	β^-,β^-n	-77.36		
		128	12 s?	[β^-],β^-n			
		129	2.5 s	β^-,β^-n			
		129	0.99 s	β^-,β^-n	-73.12		
		130	0.58 s	β^-,β^-n	-70.08 s		
		131	0.29 s	β^-,β^-n	-69.8 s	(9/2+)	
		132	0.12 s	β^-,β^-n	-≈65 s		
50	Sn	106	1.9 m	EC+β^+	-76.99 s	0+	
		107	2.90 m	β^++EC	-78.40 s		
		108	10.5 m	EC	-81.90 s	0+	
		109	18.0 m	β^+,EC	-82.62 s	7/2+	
		109	1.5 m?	?			
		110	4.1 h	EC	-85.834	0+	
		111	35 m	EC 71%,β^+ 29%	-85.94	7/2+	
		112	*1.01%*		-88.658	0+	0.4_g^{rs} 0.3_m^{rs}
		113	115.1 d	EC	-88.332	1/2+	
		113m	21 m	IT 91%,EC 9%	-88.253	7/2+	
		114	*0.67%*		-90.560	0+	
		115	*0.38%*		-90.035	1/2+	50^{rs}
		116	*14.8%*		-91.526	0+	0.006_m^{rs}
		117	*7.75%*		-90.399	1/2+	3^{rs}
		117m	14.0 d	IT	-90.084	11/2-	
		118	*24.3%*		-91.654	0+	0.08_m^{rs}
		119	*8.6%*		-90.067	1/2+	2
		119m	≈250 d	IT	-89.977	11/2-	
		120	*32.4%*		-91.102	0+	0.16_g $0.00?_m$

TABLE OF NUCLIDES

Z	Nuclide El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
50	Sn	121	27.1 h	β^-,no γ	-89.202	3/2+	
		121m	55 y	β^-	-89.196	(11/2)-	
		122	*4.56%*		-89.946	0+	0.15_m 0.001_g
		123	129 d	β^-	-87.821	11/2-	
		123m	40.1 m	β^-	-87.796	(3/2)+	
		124	*5.64%*		-88.240	0+	0.13_m 0.005_g
		125	9.62 d	β^-	-85.903	11/2-	
		125m	9.5 m	β^-	-85.876	3/2+	
		126	$\approx 1\times10^5$ y	β^-	-86.024	0+	
		127	2.1 h	β^-	-83.79	(11/2-)	
		127m	4.1 m	β^-	-83.78	(3/2)+	
		128	59.3 m	β^-	-83.44	0+	
		129	2.2 m	β^-	-80.64	(3/2+)	
		129m	7.5 m	β^-	-80.60	(11/2-)	
		130	3.7 m	β^-	-80.38	0+	
		130m	1.7 m	β^-		(7-)	
		131	63 s	β^-	-77.48 s	(3/2+)	
		132	40 s	β^-	-76.60	0+	
		133	1.47 s	β^-,β^-n	-71.5		
		134	1.04 s	β^-,β^-n ≈17%		0+	
51	Sb	108	7.0 s	β^+	-72.40 s	(3+)	
		109	18.3 s	β^++EC	-76.12 s		
		110	23 s	β^+ ≈92%,EC ≈8%	-76.75	(3)+	
		111	75 s	β^+,EC	-81.47	(5/2)+	
		112	54 s	β^+,EC	-81.63	(3+)	
		113	6.7 m	EC,β^+	-84.443	(5/2)+	
		114	3.5 m	β^+,EC	-84.14	(3)+	
		114	8 m	?			
		115	31.8 m	EC 67%,β^+ 33%	-87.005	5/2+	
		116	16 m	EC 72%,β^+ 28%	-86.93	3+	
		116m	60.4 m	EC 81%,β^+ 19%	-86.32	8-	
		117	2.80 h	EC 97.5%,β^+ 2.5%	-88.654	5/2+	
		118	3.5 m	EC,β^+	-87.967	1+	
		118	0.87 s	?			
		118m	5.00 h	EC 99.84%,β^+ 0.16%	-87.747	8-	
		119	38.0 h	EC	-89.483	5/2+	
		120	15.8 m	EC 56%,β^+ 44%	-88.421	1+	
		120	5.76 d	EC		8-	
		121	*57.3%*		-89.588	5/2+	6.1_g 0.06_m
		122	2.68 d	β^- 97.0%,EC 3.0%, β^+ 0.0063%	-88.323	2-	
		122m	4.2 m	IT	-88.160	(8-)	
		123	*42.7%*		-89.218	7/2+	4.0_g 0.04_m
		124	60.20 d	β^-	-87.613	3-	7
		$124m_1$	93 s	IT 80%,β^- 20%	-87.603	(5)+	
		$124m_2$	20.2 m	IT	-87.578		
		125	2.7 y	β^-	-88.252	7/2+	
		126	12.4 d	β^-	-86.402	(8-)	
		126m	19.0 m	β^- 86%,IT 14%	-86.384	(5)+	
		127	3.9 d	β^-	-86.704	7/2+	
		128(g)	9.1 h	β^-	-≈84.75	8-	
		128(m)	10.0 m	β^- 96.4%,IT 3.6%	-84.73	5+	
		129	4.4 h	β^-	-84.630	7/2+	
		130	40 m	β^-	-82.38	(8-)	
		130	6.5 m	β^-		(4,5)+	
		131	23.03 m	β^-	-82.10 s	(7/2+)	
		132	2.8 m	β^-	-79.68	(4+)	
		132	4.2 m	β^-		(8-)	
		133	2.7 m	β^-	-78.98		
		134	10.4 s	β^-,β^-n 0.09%	-73.87 s		
		134	0.8 s	β^-,no γ	-73.87 s		
		135	1.70 s	β^-,β^-n 20%	-70.44 s	(7/2+)	
		136	0.82 s	β^-,β^-n 32%			
52	Te	107	2.1 s	α			

TABLE OF NUCLIDES

Z	El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
52	Te	108	5.3 s	α,[β⁺+EC],(β⁺+EC)p	-65.32 s	0+	
		109	4.2 s	[β⁺+EC],(β⁺+EC)p,α	-67.47 s		
		111	19 s	β⁺+EC,(β⁺+EC)p	-74.10 s		
		113	2.0 m	β⁺+EC	-78.96		
		114	17 m	EC+β⁺	-81.46 s	0+	
		115	6.0 m	β⁺ ≈75%,EC ≈25%	-82.58	(7/2+)	
		115	7.5 m	β⁺+EC		(1/2+)	
		116	2.50 h	EC,β⁺	-85.37	0+	
		117	62 m	EC 70%,β⁺ 30%	-85.164	1/2+	
		118	6.00 d	EC,no γ	-87.671	0+	
		119	16.05 h	EC 97.2%,β⁺ 2.8%	-87.189	1/2+	
		119m	4.68 d	EC	~≈86.89	11/2-	
		120	*0.091%*		-89.404	0+	2.0^{rs}_{g} 0.3^{rs}_{m}
		121	16.8 d	EC	-88.486	1/2+	
		121m	154 d	IT 90%,EC 10%, β⁺ 0.002%	-88.192	11/2-	
		122	*2.5%*		-90.304	0+	3^{rs}_{g+m}
		123	*0.89%*		-89.166	1/2+	400^{rs}
		123m	119.7 d	IT	-88.918	11/2-	
		124	*4.6%*		-90.518	0+	7^{rs}_{g} 0.05^{rs}_{m}
		125	*7.0%*		-89.019	1/2+	1.6^{rs}
		125m	58 d	IT	-88.874	11/2-	
		126	*18.7%*		-90.066	0+	0.9^{rs}_{g} 0.13^{rs}_{m}
		127	9.4 h	β⁻	-88.285	3/2+	
		127m	109 d	IT 97.6%,β⁻ 2.4%	-88.197	11/2-	
		128	*31.7%* 1.5×10^{24} y	β⁻β⁻	-88.992	0+	0.20_{g} 0.016_{m}
		129	69 m	β⁻	-87.007	3/2+	
		129m	33.5 d	IT 63%,β⁻ 37%	-86.901	11/2-	
		130	*34.5%* 2×10^{21} y	β⁻β⁻	-87.348	0+	0.2^{rs}_{g} 0.03^{rs}_{m}
		131	25.0 m	β⁻	-85.201	3/2+	
		131m	30 h	β⁻ 78%,IT 22%	-85.019	11/2-	
		132	78 h	β⁻	-85.213	0+	
		133	12.4 m	β⁻	-82.93	(3/2+)	
		133m	55.4 m	β⁻ 83%,IT 17%	-82.60	(11/2-)	
		134	42 m	β⁻	-82.67 s	0+	
		135	19.2 s	β⁻	-77.60		
		136	17.5 s	β⁻,β⁻n 0.7%	-74.83 s	0+	
		137	4 s	β⁻,β⁻n 2.5%			
		138	1.4 s	β⁻,β⁻n 6%		0+	
53	I	115	1.3 m	β⁺+EC	-76.78 s		
		116	2.9 s	β⁺+EC	-77.61	1+	
		117	2.2 m	EC 54%,β⁺ 46%	-80.85		
		118	14.3 m	β⁺ 54%,EC 46%	-80.60	(2-)	
		118m	8.5 m	β⁺,EC,IT	-80.50		
		119	19.3 m	β⁺ 51%,EC 49%	-83.82		
		120	1.35 h	EC 54%,β⁺ 46%	-83.789	2-	
		120m	53 m	β⁺,EC	-82.86		
		121	2.12 h	EC 94%,β⁺ 6%	-86.12	5/2+	
		122	3.6 m	β⁺ 77%,EC 23%	-86.16	1+	
		123	13.0 h	EC	-87.97	5/2+	
		124	4.2 d	EC 75%,β⁺ 25%	-87.361	2-	
		125	60.2 d	EC	-88.841	5/2+	900^{sc}
		126	13.0 d	EC 53%,β⁺ 1.0%, β⁻ 46%	-87.911	2-	$6\times10^{3\,rs}$
		127	*100%*		-88.980	5/2+	6.1
		128	24.99 m	β⁻ 94%,EC 6%, β⁺ 0.003%	-87.734	1+	
		129	1.6×10^{7} y	β⁻	-88.505	7/2+	$^{18}_{9}{}^{m}_{g}$

TABLE OF NUCLIDES

Z	El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
53	I	130	12.36 h	β^-	-86.897	5+	18^{rs}
		130m	9.2 m	IT 83%,β^- 17%	-86.849	2+	
		131	8.040 d	β^-	-87.451	7/2+	0.7_{g+m}
		132	2.28 h	β^-	-85.706	4+	
		132m	83 m	IT 86%,β^- 14%	-≈85.59	(8-)	
		133	20.9 h	β^-	-85.902	7/2+	
		133m	9 s	IT	-84.268	(19/2-)	
		134	52.6 m	β^-	-83.97	(4)+	
		134m	3.5 m	IT 98%,β^- 2%	-83.65	(8-)	
		135	6.61 h	β^-	-83.796	7/2+	
		136	46 s	β^-		(5,6-)	
		136	83 s	β^-	-79.43	(2-)	
		137	24.5 s	β^-,β^-n 6%	-76.72		
		138	6.5 s	β^-,β^-n 5%	-71.85 s	(2,3-)	
		139	2.3 s	β^-,β^-n 10%	-≈68.8 s		
		140	0.8 s	β^-,β^-n 14%			
		141	0.5 s	[β^-],β^-n ≈60%			
54	Xe	113	2.8 s	[β^++EC],(β^++EC)p	-71.86 s		
		115	18 s	β^+,EC,(β^++EC)p 0.3%	-68.87 s		
		116	57 s	β^++EC	-73.27	0+	
		117	61 s	EC 65%,β^+ 35%, (EC+β^+)p 0.003%	-74.48 s		
		118	6 m	EC 86%,β^+ 14%	-77.30 s	0+	
		119	6 m	EC 82%,β^+ 18%	-78.83		
		120	40 m	EC 97%,β^+ 3%	-81.84	0+	
		121	39 m	EC 92%,β^+ 8%	-82.33		
		122	20.1 h	EC	-85.16 s	0+	
		123	2.08 h	EC 87%,β^+ 13%	-85.29	(1/2+)	
		124	*0.096%*		-87.45	0+	100_g 20_m
		125	17 h	EC 99.7%,β^+ 0.3%	-87.11	(1/2)+	
		125m	57 s	IT	-86.86	(9/2)-	
		126	*0.090%*		-89.162	0+	3_g 0.4_m
		127	36.41 d	EC	-88.316	(1/2+)	
		127m	69 s	IT	-88.019	(9/2-)	
		128	*1.92%*		-89.861	0+	0.4_m $<8_o^{rs}$
		129	*26.4%*		-88.698	1/2+	20^{rs}
		129m	8.89 d	IT	-88.461	11/2-	
		130	*4.1%*		-89.881	0+	0.4_m $<26_a$
		131	*21.2%*		-88.421	3/2+	90^{rs}
		131m	11.77 d	IT	-88.257	11/2-	
		132	*26.9%*		-89.286	0+	0.4_g 0.03_m
		133	5.25 d	β^-	-87.662	3/2+	190_g^{rs}
		133m	2.19 d	IT	-87.429	11/2-	
		134	*10.4%*		-88.125	0+	0.25_g 0.003_m
		134m	0.29 s	IT	-86.160	(7-)	
		135	9.10 h	β^-	-86.506	3/2+	2.6×10^6
		135m	15.6 m	IT 99+%,β^- 0.004%	-85.979	11/2-	
		136	*8.9%*		-86.425	0+	0.16
		137	3.82 m	β^-	-82.215	(7/2)-	
		138	14.1 m	β^-	-80.15	0+	
		139	39.7 s	β^-	-75.75	(7/2-)	
		140	14 s	β^-	-73.18	0+	
		141	1.73 s	β^-,β^-n 0.05%	-69.00		
		142	1.2 s	β^-,β^-n 0.41%	-66.05	0+	
		143	0.30 s	β^-			
		143	0.96 s	β^-			
		144	1.2 s	β^-		0+	
		145	0.9 s	β^-			
55	Cs	116	3.9 s	β^++EC,(β^++EC)p 0.3%	-62.63 s		

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
55	Cs	117	8 s	β^++EC	−66.85 s		
		118	16 s	β^++EC, (β^++EC)p 0.04%, (β^++EC)α 0.0024%	−67.89 s		
		119	38 s	β^++EC	−72.53 s		
		120	60 s	β^++EC, (β^++EC)α 2.0×10^{-5}%, (β^++EC)p 7×10^{-6}%	−73.4		
		121	126 s	β^+,EC	−77.13 s		
		122	4.5 m	β^++EC			
		122	21 s	β^++EC	−78.01 s	(2,3+)	
		122	0.4 s	?			
		123	5.9 m	β^+,EC	−81.19	(1/2+)	
		123m	1.6 s	IT			
		124	31 s	β^+ ≈92%,EC ≈8%	−81.53	(1+)	
		125	45 m	EC 61%,β^+ 39%	−84.04	1/2+	
		126	1.64 m	β^+ 82%,EC 18%	−84.33	1+	
		127	6.2 h	EC 96.5%,β^+ 3.5%	−86.226	1/2+	
		128	3.6 m	β^+ 61%,EC 39%	−85.935	1+	
		129	32.3 h	EC 99+%,β^+ 0.0030%	−87.493	1/2+	
		130	29.9 m	(EC,β^+) 98.4%, β^- 1.6%	−86.863	1+	
		131	9.688 d	EC,no γ	−88.066	5/2+	
		132	6.47 d	EC 96.5%,β^+ 1.5%, β^- 2.0%	−87.175	2(−)	
		133	*100%*		−88.089	7/2+	$27\,{}^{g}$ $2.5\,{}^{rs}_{m}$
		134	2.062 y	β^- 99+%,EC 3×10^{-4}%	−86.909	4+	$140\,{}^{rs}_{g}$
		134m	2.90 h	IT	−86.770	8−	
		135	3×10^{6} y	β^-,no γ	−87.665	7/2+	$9\,{}^{sc}$
		135m	53 m	IT	−86.038	(19/2−)	
		136	13.1 d	β^-	−86.358	5+	
		136m	19 s	IT			
		137	30.17 y	β^-	−86.560	7/2+	$0.11\,{}^{rs}_{g+m}$
		138	32.2 m	β^-	−82.98	3−	
		138m	2.9 m	IT 75%,β^- 25%	−82.90	(6−)	
		139	9.5 m	β^-	−80.63	(7/2+)	
		140	65 s	β^-	−77.24	1,2−	
		141	24.9 s	β^-,β^-n 0.05%	−75.00		
		142	1.69 s	β^-,β^-n 0.28%	−70.95		
		143	1.78 s	β^-,β^-n 1.7%	−68.36 s		
		144	1.00 s	β^-,β^-n 3.0%	−63.93 s		
		145	0.58 s	β^-,β^-n 12%	−61.72 s		
		146	0.34 s	β^-,β^-n 14%			
56	Ba	117	1.9 s	[β^++EC],(β^++EC)p			
		119	5.3 s	(β^++EC)p	−64.53 s		
		120	32 s	β^++EC	−68.8 s	0+	
		121	30 s	β^++EC, (β^++EC)p 0.02%	−70.55 s		
		122	2.0 m	β^++EC	−74.26 s	0+	
		122	≈4 s	[β^++EC]			
		123	2.7 m	β^++EC	−75.69 s		
		124	11 m	EC+β^+	−78.75 s	0+	
		125	3.5 m	β^+,EC	−79.53		
		125	8 m	β^++EC			
		126	100 m	EC+β^+	−82.56 s	0+	
		127	13 m	β^+ ≈51%,EC ≈49%	−82.78	(1/2+)	
		127	18 m	β^++EC			
		128	2.43 d	EC	−85.482	0+	
		129	2.2 h	EC,β^+	−85.046	1/2+	
		129m	2.1 h	EC+β^+	−84.769	(11/2)−	
		130	*0.106%*		−87.303	0+	$8\,{}^{rs}_{g}$ $2.5\,{}^{rs}_{m}$
		131	12.0 d	EC	−86.726	1/2+	
		131m	14.6 m	IT	−86.538	9/2−	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
56	Ba	132	*0.101%*		-88.453	0+	7^{rs}_{g} 0.6^{rs}_{m}
		133	10.7 y	EC	-87.569	1/2+	
		133m	38.9 h	IT 99+%,EC 0.011%	-87.281	11/2-	
		134	*2.42%*		-88.968	0+	0.16^{rs}_{m} $\approx 2_{a}$
		135	*6.59%*		-87.870	3/2+	6^{rs}_{g} 0.014^{rs}_{m}
		135m	28.7 h	IT	-87.602	11/2-	
		136	*7.85%*		-88.906	0+	0.011^{rs}_{m} 0.4_{a}
		136m	0.31 s	IT	-86.876	7-	
		137	*11.2%*		-87.733	3/2+	5.1^{rs}
		137m	2.551 m	IT	-87.071	11/2-	
		138	*71.7%*		-88.273	0+	0.4^{rs}
		139	82.9 m	β^-	-84.925	(7/2)-	6^{rs}
		140	12.79 d	β^-	-83.285	0+	1.6
		141	18.2 m	β^-	-79.98		
		142	10.6 m	β^-	-77.82	0+	
		143	13.5 s	β^-	-74.01 s		
		144	11.9 s	β^-	-72.03 s	0+	
		145	5 s	β^-	-67.82 s		
		146	1.7 s	β^-	-65.56 s	0+	
		148	0.5 s	β^-		0+	
57	La	125	<1 m?	?			
		126	1.0 m	β^++EC			
		127	3.8 m	β^++EC	-77.78 s		
		128	4.6 m	β^++EC	-78.68 s		
		129	10 m	β^++EC	-81.05 s	(3/2+)	
		129m	0.56 s	IT	-80.88 s	(11/2-)	
		130	8.7 m	β^+,EC	-81.60 s	(3+)	
		131	61 m	EC 76%,β^+ 24%	-83.77	3/2+	
		132	4.8 h	β^+,EC	-83.74	2-	
		132m	24.3 m	IT 76%,EC+β^+ 24%	-83.55	6-	
		133	3.91 h	EC,β^+	-85.57 s	5/2+	
		134	6.67 m	β^+ 62%,EC 38%	-85.268	1+	
		135	19.4 h	EC 99+%,β^+ 0.009%	-86.670	5/2+	
		136	9.87 m	EC 64%,β^+ 36%	-86.04	1+	
		137	6×10^4 y	EC,no γ	-87.13 s	7/2+	
		138	*0.089%* 1.1×10^{11} y	EC 68%,β^- 32%	-86.524	5+	57
		139	*99.911%*		-87.231	7/2+	9.2
		140	40.3 h	β^-	-84.320	3-	2.7^{sc}
		141	3.90 h	β^-	-83.008		
		142	93 m	β^-	-80.018	2-	
		143	14.0 m	β^-	-78.31		
		144	40 s	β^-	-74.93 s		
		145	30 s	β^-	-72.92 s		
		146	11 s	β^-	-69.46 s		
		148	1.3 s	β^-	-63.99 s		
58	Ce	128	≈6 m	[EC+β^+]		0+	
		129	3.5 m	β^++EC			
		130	25 m	EC+β^+		0+	
		131	5 m	EC+β^+	-79.47 s		
		131	10 m	EC 89%,β^+ 11%	-79.47 s		
		132	3.5 h	EC	-82.34 s	0+	
		133	97 m	EC+β^+	-82.17 s	1/2(+)	
		133	5.4 h	EC,β^+	-82.17 s	9/2-	
		134	76 h	EC	-84.77 s	0+	
		135	17.8 h	EC 99%,β^+ 1%	-84.55	1/2(+)	
		135m	20 s	IT	-84.10	(11/2-)	
		136	*0.190%*		-86.50	0+	6^{rs}_{g} 1.0^{rs}_{m}
		137	9.0 h	EC 99+%,β^+ 0.014%	-85.91 s	3/2+	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
58	Ce	137m	34.4 h	IT 99.2%,EC 0.8%	−85.66 s	11/2−	
		138	*0.254%*		−87.565	0+	1.0^{rs}_{g} 0.015^{rs}_{m}
		139	137.2 d	EC	−86.966	3/2+	
		139m	56 s	IT	−86.212	11/2−	
		140	*88.5%*		−88.081	0+	0.56^{rs}
		141	32.5 d	β^-	−85.438	7/2−	29^{rs}
		142	*11.1%*		−84.535	0+	0.95
		143	33.0 h	β^-	−81.610	3/2−	6^{rs}
		144	284 d	β^-	−80.431	0+	1.0
		145	3.0 m	β^-	−77.12		
		146	14 m	β^-	−75.76	0+	
		147	56 s	β^-	−72.24 s		
		148	48 s	β^-	−70.81 s	0+	
		149	5.0 s	β^-	−67.47 s		
		150	4 s	β^-	−65.3 s	0+	
		151	1.0 s	β^-	−62.68 s		
59	Pr	121	1 s	$[\beta^+$+EC],$(\beta^+$+EC)p			
		129	24 s	β^++EC			
		130	28 s	β^+,EC			
		132	1.6 m	β^++EC	−75.34 s		
		133	6.5 m	β^+,EC	−77.97 s	5/2(+)	
		134	17 m	β^++EC	−78.47 s	2+	
		134	≈11 m	β^++EC	−78.47 s		
		135	25 m	EC ≈75%,β^+ ≈25%	−80.99	3/2(+)	
		136	13.1 m	β^+,EC	−81.40	2+	
		137	1.28 h	EC 75%,β^+ 25%	−83.21 s	5/2+	
		138	1.4 m	β^+,EC	−83.128	1+	
		138m	2.1 h	EC 77%,β^+ 23%	−82.765	7−	
		139	4.4 h	EC 92%,β^+ 8%	−84.854	5/2+	
		139	≈6 m?	?			
		140	3.39 m	EC 51%,β^+ 49%	−84.693	1+	
		141	*100%*		−86.018	5/2+	$^{8}_{3.9^{m}}$
		142	19.2 h	β^- 99+%,EC 0.016%	−83.790	2−	20^{rs}
		142m	14.6 m	IT	−83.786	5−	
		142	1.6 m?	?			
		143	13.58 d	β^-	−83.065	7/2+	90_{g+m}
		144	17.3 m	β^-	−80.750	0−	
		144m	7.2 m	IT 99.96%,β^- 0.04%	−80.691	3−	
		145	5.98 h	β^-	−79.625	(7/2+)	
		146	24.0 m	β^-	−76.84	(1,2−)	
		147	13 m	β^-	−75.44		
		148	2.30 m	β^-	−72.61	(3)	
		149	2.3 m	β^-	−71.37	(5/2+)	
		150	6.2 s	β^-	−68.0		
		150	30 s?	β^-			
		151	4 s	β^-	−67.44 s		
60	Nd	129	6 s	$[\beta^+$+EC],$(\beta^+$+EC)p			
		130	28 s	β^+,EC		0+	
		132	1.8 m	β^++EC		0+	
		133	1.2 m	β^++EC			
		134	8 m	EC+β^+		0+	
		135	12 m	β^++EC	−76.29 s	9/2(−)	
		135	5.5 m	$[\beta^+$+EC]	−76.29 s		
		136	50.6 m	EC 94%,β^+ 6%	−79.19	0+	
		137	38 m	β^+,EC	−79.41 s	1/2+	
		137m	1.6 s	IT	−78.89 s	11/2−	
		137	≈22 m	?			
		138	5.1 h	EC	−82.03 s	0+	
		139	30 m	EC 74.4%,β^+ 25.6%	−82.05	3/2+	
		139m	5.5 h	EC 87%,β^+ ≈1%, IT 12%	−81.82	11/2−	
		140	3.37 d	EC,no γ	−84.22	0+	
		141	2.5 h	EC 97.3%,β^+ 2.7%	−84.203	3/2+	
		141m	61 s	IT 99.97%, EC+β^+ 0.03%	−83.446	11/2−	

TABLE OF NUCLIDES

Z	Nuclide El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
60	Nd	142	*27.2%*		-85.949	0+	19 rs
		143	*12.2%*		-84.000	7/2-	320
		144	*23.8%* 2.1×10^{15} y	α	-83.746	0+	4 rs
		145	*8.3%*		-81.430	7/2-	41
		146	*17.2%*		-80.923	0+	1.3
		147	11.0 d	β$^-$	-78.144	5/2-	440 rs
		148	*5.7%*		-77.407	0+	2.5
		149	1.73 h	β$^-$	-74.374	5/2-	
		150	*5.6%*		-73.682	0+	1.2
		151	12.4 m	β$^-$	-70.945	(3/2+)	
		152	11.4 m	β$^-$	-70.146	0+	
		154	40 s	β$^-$		0+	
61	Pm	132	4 s	β$^+$+EC			
		133	12 s	β$^+$+EC			
		134	24 s	β$^+$+EC			
		135	0.9 m	β$^+$+EC		(11/2-)	
		136	107 s	β$^+$+EC	-71.36 s	(5+)	
		137	2.4 m	β$^+$+EC	-74.21 s	(11/2-)	
		138	3.5 m	β$^+$+EC	-75.03 s	(3+)	
		139	4.15 m	β$^+$,EC	-77.60	(5/2)+	
		140	9.2 s	β$^+$,EC	-78.18	1+	
		140m	5.9 m	EC 58%,β$^+$ 42%	-77.78	(7-)	
		141	20.9 m	β$^+$ 57%,EC 43%	-80.47	5/2+	
		142	40.5 s	β$^+$ 69%,EC 31%	-81.06	1+	
		143	265 d	EC	-82.959	5/2+	
		144	349 d	EC	-81.416	5-	
		145	17.7 y	EC 99+%,α 2.8×10^{-7}%	-81.270	5/2+	
		146	5.5 y	EC 63%,β$^-$ 37%	-79.442	3-	8×10^3 rs
		147	2.6234 y	β$^-$	-79.040	7/2+	97 g 85 m
		148	5.37 d	β$^-$	-76.870	1-	<3×10^3 rs
		148m	41.3 d	β$^-$ 95%,IT 5%	-76.733	6-	1.06×10^4
		149	53.1 h	β$^-$	-76.063	7/2+	1.4×10^3 rs
		150	2.68 h	β$^-$	-73.55	(1-)	
		151	28.4 h	β$^-$	-73.386	5/2+	<700 rs
		152	4.1 m	β$^-$	-71.29	(1+)	
		152	7.5 m	β$^-$		(4)	
		152	15 m	β$^-$		(≥6)	
		153	5.4 m	β$^-$	-70.76	(5/2-)	
		154	1.7 m	β$^-$	-68.45	(0,1)	
		154	2.7 m	β$^-$		(3,4)	
62	Sm	133	32.0 s	β$^+$+EC,(β$^+$+EC)p			
		134	12 s	β$^+$+EC		0+	
		135	10 s	β$^+$+EC,(β$^+$+EC)p			
		137	44 s	β$^+$+EC			
		138	3.0 m	β$^+$+EC		0+	
		139	2.5 m	β$^+$,EC	-72.40		
		139m	10 s	IT 93.7%,β$^+$+EC 6.3%	-71.94	(11/2)-	
		140	14.8 m	EC,β$^+$	-75.48 s	0+	
		141	10.2 m	EC 53%,β$^+$ 47%	-75.91	1/2+	
		141m	22.5 m	(β$^+$,EC) 99.69%, IT 0.31%	-75.73	11/2-	
		142	72.49 m	EC 90%,β$^+$ 10%	-78.978	0+	
		143	8.83 m	EC 54%,β$^+$ 46%	-79.511	3/2+	
		143m	66 s	IT 99.80%, β$^+$+EC 0.20%	-78.757	11/2-	
		144	*3.1%*		-81.964	0+	0.7 rs
		145	340 d	EC	-80.656	7/2-	110 rs
		146	*<2×10^{-7}%* 1.03×10^8 y	α	-80.984	0+	
		147	*15.1%* 1.06×10^{11} y	α	-79.265	7/2-	60
		148	*11.3%* 8×10^{15} y	α	-79.335	0+	4.7
		149	*13.9%*		-77.135	7/2-	4.2×10^4
		150	*7.4%*		-77.049	0+	104

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
62	Sm	151	90 y	β^-	−74.574	5/2−	1.5×10^{4} rs
		152	*26.6%*		−74.761	0+	204
		153	46.8 h	β^-	−72.557	3/2+	
		154	*22.6%*		−72.454	0+	5
		155	22.4 m	β^-	−70.196	3/2−	
		156	9.4 h	β^-	−69.368	0+	
		157	8.0 m	β^-	−66.86		
63	Eu	138	1.5 s	β^+			
		138	35 s	β^+			
		139	22 s	β^++EC			
		140	1.3 s	β^+,EC			
		140	≈20 s	β^++EC			
		141	40 s	β^+,EC	−69.88	(5/2+)	
		141m	3.3 s	β^++EC 67%,IT 33%	−69.78	(11/2−)	
		142	2.4 s	β^+,EC	−71.48 s	1+	
		142	1.22 m	β^+,EC	−71.48 s	(7−)	
		143	2.61 m	β^+ ≈72%,EC ≈28%	−74.41	(5/2)+	
		144	10.2 s	β^+ ≈80%,EC ≈20%	−75.636	1+	
		145	5.93 d	EC 98%,β^+ 2%	−77.936	5/2+	
		146	4.62 d	EC 96.1%,β^+ 3.9%	−77.111	4−	
		146	38 h?	?			
		147	22 d	EC 99.5%,β^+ 0.5%, α 0.002%	−77.535	5/2+	
		148	54 d	EC 99.8%,β^+ 0.2%, α 9×10^{-7}%	−76.235	5−	
		149	93.1 d	EC	−76.439	5/2+	
		150	36 y	EC		(4,5−)	
		150	12.6 h	β^- 89%,EC 10.6%, β^+ ≈0.6%	−74.756	0(−)	
		151	*47.9%*		−74.650	5/2+	5.8×10^{3} g 3.2×10^{3} m1 4 m2
		152	13 y	EC 73.0%, β^+ 0.019%,β^- 27.0%	−72.884	3−	
		$152m_1$	9.3 h	β^- 76%,EC 24%, β^+ 0.011%	−72.836	0−	<3 rs
		$152m_2$	96 m	IT	−72.736	8−	
		153	*52.1%*		−73.363	5/2+	380 g
		154	8.5 y	β^- 99.98%,EC 0.02%	−71.726	3−	
		154m	46 m	IT	−≈71.57	(8−)	
		155	4.9 y	β^-	−71.825	5/2+	4.0×10^{3}
		156	15 d	β^-	−70.083	0+	
		157	15.13 h	β^-	−69.465	(5/2+)	
		158	45.9 m	β^-	−67.24	(1−)	
		159	18.1 m	β^-	−65.93	(5/2+)	
		160	0.8 m	β^-	−63.54 s	(0−)	
		160	≈2.5 m?	β^-			
64	Gd	143	1.83 m	β^++EC	−68.51 s	(11/2,13/2−)	
		143	39 s?	?			
		144	4.5 m	β^++EC	−71.94 s	0+	
		145	22 m	β^+,EC	−72.94 s	1/2+	
		145m	85 s	IT 95.3%,β^++EC 4.7%	−72.19 s	11/2−	
		146	48.3 d	EC 99.93%,β^+ 0.07%	−75.361	0+	
		146	7 h?	α,EC			
		147	38.1 h	EC 99.74%,β^+ 0.26%	−75.207	7/2−	
		148	98 y	α	−76.268	0+	
		149	9.3 d	EC 99+%,α 5×10^{-4}%	−75.131	7/2−	
		150	1.8×10^{6} y	α	−75.765	0+	
		151	120 d	EC 99+%,α ≈8×10^{-7}%	−74.168	7/2−	
		152	*0.20%* 1.1×10^{14} y	α	−74.703	0+	1.1×10^{3}
		153	241.6 d	EC	−73.119	3/2−	
		154	*2.1%*		−73.704	0+	90
		155	*14.8%*		−72.071	3/2−	6.1×10^{4}
		156	*20.6%*		−72.536	0+	2
		157	*15.7%*		−70.825	3/2−	2.55×10^{5}
		158	*24.8%*		−70.691	0+	2.4
		159	18.6 h	β^-	−68.562	3/2−	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
64	Gd	160	*21.8%*		-67.943	0+	0.77
		161	3.7 m	β^-	-65.507	5/2-	4×10^4 rs
		162	9 m	β^-	-64.36	0+	
65	Tb	146	23 s	β^++EC	-67.26 s	(4-)	
		147	1.6 h	EC 95%,β^+ 5%	-70.51 s	5/2+	
		147	1.9 m	EC,β^+	-70.51 s	11/2-	
		148	2.2 m	EC+β^+		(9+)	
		148	60 m	EC 80%,β^+ 20%	-70.64	2-	
		149	4.15 h	EC 79%,β^+ 4.0%, α 17%	-71.434	(3/2,5/2+)	
		149m	4.2 m	(EC,β^+) 99+%, α 0.020%	-71.394	(11/2-)	
		150	3.3 h	EC 90%,β^+ 10%, α ≤0.05%	-71.098	(2)-	
		150	6.0 m	EC+β^+		(8,9+)	
		151	17.6 h	EC 99%,β^+ ≈1%, α 0.009%	-71.608	1/2(+)	
		152	17.5 h	EC 87%,β^+ 13%	-70.853	2-	
		152m	4.2 m	IT 78%,EC 22%	-70.351	(8+)	
		153	2.30 d	EC 99+%,β^+ 0.04%	-71.329	5/2+	
		154	21 h	EC 98%,β^+ 2%	-70.24	0(+)	
		$154m_1$	9 h	EC+β^+ 78%,IT 22%		3(-)	
		$154m_2$	23 h	EC 98%,IT 2%		(7,8-)	
		155	5.3 d	EC	-71.256	3/2+	
		156	5.3 d	EC	-70.098	3-	
		156m	5.0 h	IT,EC,β^+ 0.02%, β^-(weak)	-70.010	(0)+	
		156	24 h	IT			
		157	150 y	EC	-70.767	3/2+	
		158	150 y	EC 82%,β^- 18%	-69.475	3-	
		158m	10.5 s	IT	-69.365	0-	
		159	*100%*		-69.536	3/2+	23
		160	72.1 d	β^-	-67.840	3-	500 rs
		161	6.90 d	β^-	-67.466	3/2+	
		162	7.7 m	β^-	-65.76	(1)-	
		163	19.5 m	β^-	-64.68	3/2+	
		164	3.0 m	β^-	-62.11	(5+)	
66	Dy	147m	59 s	IT,EC?	-63.46 s		
		148	3.1 m	EC+β^+	-67.77 s	0+	
		149	4.1 m	β^++EC	-67.53 s	(7/2-)	
		150	7.17 m	(EC,β^+) 69%,α 31%	-69.14 s	0+	
		151	17 m	EC+β^+ 94%,α 6%	-68.601	7/2-	
		152	2.37 h	EC 99.91%,α 0.09%	-70.116	0+	
		153	6.3 h	(EC,β^+) 99+%, α 0.010%	-69.155	7/2(-)	
		154	$\approx1\times10^7$ y	α	-70.392	0+	
		155	10.0 h	EC 97%,β^+ 3%	-69.157	3/2-	
		156	*0.057%*		-70.527	0+	33 sc
		157	8.1 h	EC	-69.425	3/2-	
		158	*0.100%*		-70.410	0+	70 rs
		159	144.4 d	EC	-69.171	3/2-	
		160	*2.3%*		-69.674	0+	60
		161	*19.0%*		-68.056	5/2+	570
		162	*25.5%*		-68.181	0+	160
		163	*24.9%*		-66.382	5/2-	130
		164	*28.1%*		-65.967	0+	1.8×10^3 m 900_g
		165	2.33 h	β^-	-63.611	7/2+	4.0×10^3 rs
		165m	1.26 m	IT 97.8%,β^- 2.2%	-63.503	1/2-	2.1×10^3 rs
		166	81.5 h	β^-	-62.583	0+	
		167	6.2 m	β^-	-59.97	(1/2-)	
67	Ho	150	40 s	β^++EC	-62.04 s	(8,9+)	
		151	47 s	β^++EC 90%,α 10%	-63.44 s		
		151	35.6 s	β^++EC 80%,α 20%	-63.44 s		
		152	52 s	β^++EC 94%,α 6%		(9+)	
		152	2.4 m	β^++EC 98.3%,α 1.7%	-63.71	(3+)	

TABLE OF NUCLIDES

Z	El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
67	Ho	153	2.0 m	EC+β^+ 99.96%, α 0.04%			
		153	9.3 m	EC+β^+ 99.9%,α 0.1%	-64.954		
		153	27 m?	α			
		154	12 m	β^++EC 99+%,α 0.017%	-64.635	1	
		154	3.2 m	EC+β^+ 99+%, α <0.002%			
		155	49 m	EC,β^+,α	-66.055	5/2	
		156	56 m	β^++EC,IT		1	
		156	2 m	β^++EC	-65.43 s	(5+)	
		156	7.4 m?	β^++EC			
		157	12.6 m	β^+,EC	-66.89	7/2-	
		158	11.5 m	EC,β^+	-66.433	5+	
		$158m_1$	27 m	IT 65%,EC+β^+ 35%	-66.366	2-	
		$158(m_2)$	21 m	EC+β^+		(9+)	
		159	33 m	EC	-67.318	7/2-	
		159m	8.3 s	IT	-67.112	1/2+	
		160	25.6 m	EC 99+%,β^+ ≈0.4%	-66.388	5+	
		160m	5.02 h	IT 65%,(EC,β^+) 35%	-66.328	2-	
		160	3 s	?			
		160	7 m	?		(1+)	
		160	≈1 h	?		(9+)	
		161	2.48 h	EC	-67.203	7/2-	
		161m	6.7 s	IT	-66.992	1/2+	
		162	15 m	EC 95%,β^+ 5%	-66.047	1+	
		162m	68 m	IT 61%,EC+β^+ 39%	-≈65.94	6-	
		163	≈33 y	EC,no γ	-66.379	7/2-	
		163m	1.09 s	IT	-66.08	1/2+	
		164	29.0 m	EC 58%,β^- 42%	-64.937	1+	
		164m	37 m	IT	-64.797	6(-)	
		165	*100%*		-64.896	7/2-	62^{g}_{3m}
		166	26.80 h	β^-	-63.067	0-	
		166m	1.2×10^3 y	β^-	-63.062	(7-)	
		167	3.1 h	β^-	-62.316	(7/2-)	
		168	3.0 m	β^-	-60.27	3+	
		169	4.6 m	β^-	-58.793	(7/2-)	
		170	43 s	β^-	-56.10		
		170	2.8 m	β^-	-56.09		
68	Er	151	23 s	β^++EC	-58.20 s		
		152	10 s	α ≈90%,EC+β^+ ≈10%	-60.41 s	0+	
		153	36 s	EC+β^+ ≈62%,α ≈38%	-60.31 s		
		154	3.8 m	EC+β^+ 99.5%,α 0.5%	-62.44 s	0+	
		155	5 m	EC+β^+ 99+%,α ≥0.02%	-62.057		
		156	20 m	EC+β^+	-63.93 s	0+	
		157	24 m	β^+,EC	-63.09 s	3/2-	
		158	2.4 h	EC,β^+	-65.03 s	0+	
		159	36 m	EC,β^+	-64.39	3/2-	
		160	28.6 h	EC,no γ	-66.052	0+	
		161	3.24 h	EC 99.96%,β^+ 0.04%	-65.197	3/2-	
		162	*0.14%*		-66.335	0+	19
		163	75.1 m	EC 99+%,β^+ 0.004%	-65.168	5/2-	
		164	*1.56%*		-65.940	0+	13
		165	10.4 h	EC,no γ	-64.518	5/2-	
		166	*33.4%*		-64.921	0+	15^{rs}_{m} 5^{rs}_{g}
		167	*22.9%*		-63.286	7/2+	650 rs
		167m	2.28 s	IT	-63.078	1/2-	
		168	*27.1%*		-62.985	0+	2.0
		169	9.40 d	β^-	-60.917	1/2-	
		170	*14.9%*		-60.104	0+	5.7
		171	7.52 h	β^-	-57.714	5/2-	300 rs
		172	49.5 h	β^-	-56.49	0+	
		173	1.4 m	β^-	-53.73	(7/2-)	
		173	12 m	β^-			
69	Tm	153	1.6 s	α	-53.87 s		
		154	5 s	α	-54.53 s		
		154	3.0 s	α	-54.53 s		

TABLE OF NUCLIDES

Z	Nuclide El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
69	Tm	155	39 s	α	-56.45 s		
		156	80 s	α,β⁺+EC	-56.94 s		
		156	19 s	α	-56.94 s		
		157	3.6 m	EC+β⁺	-58.49 s		
		158	4.0 m	β⁺+EC	-58.43 s		
		159	9.0 m	EC,β⁺	-60.19 s	5/2(+)	
		160	9.2 m	EC 85%,β⁺ 15%	-60.13	1-	
		161	30 m	EC,β⁺	-61.68 s	7/2(+)	
		161	7 m?	?			
		162	22 m	EC 93%,β⁺ 7%	-61.54	1-	
		162m	24 s	IT 90%,EC+β⁺ 10%		(5+)	
		163	1.8 h	EC 99.8%,β⁺ 0.2%	-62.99	1/2+	
		163m	11 m	IT?,EC?			
		164	2.0 m	EC 61%,β⁺ 39%	-61.978	1+	
		164m	5.1 m	IT ≈80%,EC+β⁺ ≈20%		6(-)	
		165	30.06 h	EC 99+%,β⁺ 0.007%	-62.924	1/2+	
		166	7.7 h	EC 98%,β⁺ 2%	-61.874	2+	
		167	9.25 d	EC	-62.537	1/2+	
		168	93.1 d	EC ≈98%,β⁻? ≈2%	-61.306	3(+)	
		169	*100%*		-61.269	1/2+	98 $_g$
		170	128.6 d	β⁻ 99+%,EC 0.144%	-59.791	1-	92 ^{sc}
		171	1.92 y	β⁻	-59.205	1/2+	4.5 ^{sc}
		172	63.6 h	β⁻	-57.380	2-	
		173	8.2 h	β⁻	-56.226	(1/2+)	
		174	5.4 m	β⁻	-53.85	(4-)	
		175	15 m	β⁻	-52.29	(1/2+)	
		176	1.9 m	β⁻	-49.59 s	(4+)	
		176	1.5 m?	β⁻			
70	Yb	154	0.39 s	α	-50.05 s	0+	
		155	1.6 s	α	-50.45 s		
		156	24 s	α	-53.06 s	0+	
		157	34 s	α	-53.27 s		
		158	1.1 m	EC+β⁺	-55.53 s	0+	
		160	4.8 m	EC+β⁺	-57.55 s	0+	
		161	4.2 m	β⁺+EC	-57.40 s		
		162	18.9 m	EC ≥98%,β⁺ ≤2%	-59.34 s	0+	
		163	11.0 m	EC+β⁺	-59.62	(3/2-)	
		164	76 m	EC	-60.88 s	0+	
		165	10 m	EC,β⁺	-60.161	(5/2)-	
		166	56.7 h	EC	-61.582	0+	
		167	17.5 m	EC 99.6%,β⁺ 0.4%	-60.583	5/2-	
		168	*0.135%*		-61.565	0+	3.5×10^3 $_{g+m}$
		169	32.0 d	EC	-60.361	7/2+	
		169m	46 s	IT	-60.337	1/2-	
		170	*3.1%*		-60.759	0+	10
		171	*14.4%*		-59.302	1/2-	53
		172	*21.9%*		-59.250	0+	1
		173	*16.2%*		-57.546	5/2-	17
		174	*31.6%*		-56.940	0+	19 $_g$
		175	4.19 d	β⁻	-54.691	7/2-	
		176	*12.6%*		-53.490	0+	2.4 $_{g+m}$
		176m	11.7 s	IT	-52.439	(8)-	
		177	1.9 h	β⁻	-50.986	9/2+	
		177m	6.4 s	IT	-50.655	1/2-	
		178	74 m	β⁻	-49.66	0+	
71	Lu	155	0.07 s	α	-42.60 s		
		156	0.23 s	α	-43.81 s		
		156	≈0.5 s	α	-43.81 s		
		162	1.4 m?	β⁺+EC	-52.34 s		
		164	3.17 m	β⁺+EC	-54.58 s		
		165	11.8 m	EC+β⁺	-56.16 s	1/2	
		166	2.6 m	EC,β⁺	-56.10	(6-)	
		166m$_1$	1.4 m	EC+β⁺ 58%,IT 42%	-56.07	(3-)	
		166m$_2$	2.1 m	EC+β⁺ >80%	-56.06	(0-)	
		167	52 m	EC 98.2%,β⁺ 1.8%	-57.45	7/2+	
		168	5.5 m	EC,β⁺	-57.10	(6)-	
		168m	6.7 m	EC ≈88%,β⁺ ≈12%	-56.88	3+	
		169	34.1 h	EC 99.3%,β⁺ 0.7%	-57.881	7/2+	
		169m	2.7 m	IT	-57.852	1/2-	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
71	Lu	170	2.02 d	EC,β^+	-57.319	0+	
		170m	0.7 s	IT	-57.226	4-	
		171	8.25 d	EC 99+%,β^+ ≈0.005%	-57.821	7/2+	
		171m	79 s	IT	-57.750	1/2-	
		172	6.70 d	EC	-56.726	4-	
		172m	3.7 m	IT	-56.684	1-	
		173	1.37 y	EC	-56.871	7/2+	
		174	3.3 y	EC 99+%,β^+ 0.025%	-55.562	(1-)	
		174m	142 d	IT 99.3%,EC 0.7%	-55.391	(6-)	
		175	*97.39%*		-55.159	7/2+	16_m 10_g
		176	*2.61%* 3.6×10^{10} y	β^-	-53.381	7-	$2.0\times10^3{}_g$ 7_m
		176m	3.68 h	β^-	-53.254	1-	
		177	6.71 d	β^-	-52.382	7/2+	
		177m	160.5 d	β^- 78%,IT 22%	-51.412	23/2-	
		178	28.4 m	β^-	-50.30	1+	
		178m	23 m	β^-	-≈50.00	(9)-	
		178	5 m?	β^-			
		179	4.6 h	β^-	-49.11	(7/2+)	
		180	5.7 m	β^-	-46.68		
72	Hf	157	0.12 s	α	-38.96 s		
		158	3.0 s	α	-42.22 s	0+	
		159	5.6 s	α	-42.80 s		
		160	≈12 s	α	-45.75 s	0+	
		161	17 s	α	-46.13 s		
		166	6.8 m	EC+β^+	-53.48 s	0+	
		167	2.05 m	EC,β^+	-53.15 s	(5/2-)	
		168	25.9 m	EC ≈98%,β^+? ≈2%	-55.10 s	0+	
		169	3.3 m	EC 86%,β^+ 14%	-54.53	(5/2)-	
		170	16.0 h	EC	-56.12 s	0+	
		171	12.1 h	EC+β^+	-55.30 s	7/2+	
		172	1.87 y	EC	-56.33 s	0+	
		173	24.0 h	EC	-55.27 s	1/2-	
		174	*0.16%* 2.0×10^{15} y	α	-55.830	0+	400
		175	70 d	EC	-54.548	5/2-	
		176	*5.2%*		-54.567	0+	30_g 390_g
		177	*18.6%*		-52.879	7/2-	1.0_{m1} 2×10^{-7} r s $_{m2}$
		$177m_1$	1.1 s	IT	-51.564	23/2+	
		$177m_2$	51 m	IT	-50.139	37/2-	
		178	*27.1%*		-52.434	0+	50_{m1} 40_g
		$178m_1$	4.0 s	IT	-51.287	8-	
		$178m_2$	31 y	IT	-49.987	16+	
		179	*13.7%*		-50.462	9/2+	50_g 0.4^{sc}_m
		$179m_1$	18.7 s	IT	-50.087	1/2-	
		$179m_2$	25.1 d	IT	-49.356	25/2-	
		180	*35.2%*		-49.779	0+	14
		180m	5.5 h	IT	-48.637	8-	
		181	42.4 d	β^-	-47.403	1/2-	30^{rs}_g
		182	9×10^6 y	β^-	-45.99	0+	
		182m	62 m	β^- 54%,IT 46%	-44.82	(8-)	
		183	64 m	β^-	-43.269	(3/2-)	
		184	4.12 h	β^-	-41.48	0+	
73	Ta	166	32 s	β^++EC	-46.10 s		
		167	3 m	β^++EC	-47.95 s		
		168	2.4 m	β^++EC	-48.40 s	(2-,3+)	
		169	5 m	EC+β^+	-50.03 s		
		170	6.8 m	β^+,EC	-50.12 s	(3+)	
		171	24 m	EC+β^+	-51.60 s		
		171	2.0 m?	?			
		171	6.3 m?	?			

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
73	Ta	172	37 m	EC ≈85%,β^+ ≈15%	-51.41 s	(3-)	
		173	3.6 h	EC,β^+	-52.37 s	(5/2-)	
		174	1.1 h	EC,β^+	-51.98	3(+)	
		175	10.5 h	EC,β^+	-52.35 s	7/2+	
		176	8.1 h	EC 99.3%,β^+ 0.7%	-51.47	(1-)	
		177	56.6 h	EC 99+%, β^+ 2.9×10^{-4}%	-51.721	7/2+	
		178	9.3 m	EC 98.9%,β^+ 1.1%	-50.52	1+	
		178	2.4 h	EC		(7)-	
		179	1.7 y	EC,no γ	-50.347	(7/2+)	
		180(g)	*0.0123%* $\gtrsim1\times10^{13}$ y			(8+)	700
		180(m)	8.1 h	EC 87%,β^- 13%	-48.914	1	
		181	*99.9877%*		-48.425	7/2+	21^{g}_{m2} 0.010^{g}_{m2}
		182	115 d	β^-	-46.417	3-	8.2×10^{3}
		$182m_1$	0.28 s	IT	-46.400	5+	
		$182m_2$	15.8 m	IT	-45.897	10-	
		183	5.1 d	β^-	-45.279	7/2+	
		184	8.7 h	β^-	-42.821	(5-)	
		185	49 m	β^-	-41.360	(7/2+)	
		186	10.5 m	β^-	-38.60	(3-)	
74	W	160	≦0.2 s?	α		0+	
		162	<0.25 s	α	-34.13 s	0+	
		163	2.5 s	α,(β^++EC)?	-35.31 s		
		164	6 s	α	-38.04 s	0+	
		165	5.1 s	α	-38.67 s		
		166	16 s	α	-41.48 s	0+	
		170	4 m	EC+β^+	-46.92 s	0+	
		171	9 m	EC+β^+	-46.90 s		
		172	6.7 m	EC,β^+	-48.81 s	0+	
		173	16 m	EC+β^+	-48.47 s		
		174	29 m	EC	-50.08 s	0+	
		175	34 m	EC+β^+	-49.45 s	(1/2-)	
		176	2.3 h	EC	-50.57 s	0+	
		177	135 m	EC+β^+	-49.72 s	(1/2-)	
		178	21.5 d	EC,no γ	-50.43	0+	
		179	38 m	EC	-49.283	(7/2-)	
		179m	6.4 m	IT 99.69%,EC 0.31%	-49.061	(1/2-)	
		180	*0.13%*		-49.624	0+	$\approx10^{rs}$
		181	121 d	EC	-48.237	9/2+	
		182	*26.3%*		-48.228	0+	21_{g+m} 10.1
		183	*14.3%*		-46.347	1/2-	
		183m	5.3 s	IT	-46.038	(11/2)+	
		184	*30.7%*		-45.687	0+	1.8_{g} 0.002_{m}
		185	75.1 d	β^-	-43.370	3/2-	
		185m	1.66 m	IT	-43.173	11/2+	
		186	*28.6%*		-42.498	0+	38
		187	23.9 h	β^-	-39.893	3/2-	70
		188	69.4 d	β^-	-38.657	0+	
		189	11.5 m	β^-	-35.47		
		190	30 m	β^-	-34.22	0+	
75	Re	170	8.0 s	β^++EC	-38.92 s		
		172	30 s	β^++EC	-41.51 s		
		174	2.3 m	β^++EC	-43.58 s		
		175	4.6 m	EC+β^+	-45.15 s		
		176	5.2 m	EC+β^+	-44.97 s		
		177	14 m	EC+β^+	-46.12 s	(5/2-)	
		178	13.2 m	EC 89%,β^+ 11%	-45.77	(3)	
		179	19.7 m	EC 99.1%,β^+ 0.9%	-46.59	(5/2+)	
		180	2.4 m	EC 92%,β^+ 8%	-45.829	(1)-	
		181	20 h	EC	-46.44 s	5/2+	
		182	64 h	EC	-45.43 s	7+,6±	
		182	12.7 h	EC 99.8%,β^+ 0.2%	-45.43 s	2+	
		183	71 d	EC	-45.791	(5/2)+	
		184	38 d	EC	-44.191	3-	
		184m	169 d	IT 75%,EC 25%	-44.003	8+	
		184	2.2 d?	?			

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
75	Re	185	*37.40%*		−43.802	5/2+	110_g 0.3^{sc}_m
		186	90.6 h	β^- 92.2%,EC 7.8%	−41.910	1−	
		186m	2×10^5 y	IT	−≈41.76	[8+]	
		187	*62.60%* 4×10^{10} y	β^-,no γ	−41.205	5/2+	74_g 1.0_m
		188	16.9 h	β^-	−39.006	1−	
		188m	18.7 m	IT	−38.834	(6)−	
		189	24.3 h	β^-	−37.970	(5/2+)	
		189	4.3 d?	β^-			
		190	3.1 m	β^-	−35.52	(2−)	
		190m	3.2 h	β^- ≈51%,IT ≈49%	−≈35.30	(6−)	
		191	9.8 m	β^-	−34.343		
		192	16 s	β^-	−≈31.9 s		
76	Os	169	3.0 s	α	−30.55 s		
		170	7.1 s	α	−33.53 s	0+	
		171	8 s	α	−34.16 s		
		172	19 s	EC+β^+ 99+%,α ≤0.3%	−36.84 s	0+	
		173	16 s	β^++EC 99.98%, α 0.02%	−37.41 s		
		174	45 s	EC+β^+ 99.98%, α 0.02%	−39.62 s	0+	
		175	1.4 m	[EC+β^+]	−39.71 s		
		176	3.6 m	EC+β^+	−41.81 s	0+	
		177	4 m	EC+β^+	−41.62 s		
		178	5.0 m	EC+β^+	−43.35 s	0+	
		179	7 m	EC+β^+	−42.89 s		
		180	22 m	EC	−44.22 s	0+	
		181	105 m	EC+β^+		(1/2−)	
		181	2.7 m	EC,β^+	−43.41 s	(7/2−)	
		182	22.0 h	EC	−44.58 s	0+	
		183	13 h	EC 99.91%,β^+ 0.09%	−43.49 s	9/2+	
		183m	9.9 h	EC 89%,IT 11%	−43.32 s	1/2−	
		184	*0.018%*		−44.233	0+	3×10^3
		185	93.6 d	EC	−42.787	1/2−	
		186	*1.6%* 2×10^{15} y	α	−42.987	0+	80
		187	*1.6%*		−41.208	1/2−	330
		188	*13.3%*		−41.125	0+	$\leq5_g$ 20_g
		189	*16.1%*		−38.978	3/2−	$2.6\times10^{-4}{}_m$
		189m	5.7 h	IT	−38.947	9/2−	
		190	*26.4%*		−38.699	0+	9_m 4_g
		190m	9.9 m	IT	−36.994	10−	
		191	15.4 d	β^-	−36.388	9/2−	
		191m	13.1 h	IT	−36.314	3/2−	
		192	*41.0%*		−35.875	0+	2.0
		192m	6.1 s	IT	−33.860	(10−)	
		193	30.6 h	β^-	−33.387	(3/2−)	$1.5\times10^{3}{}_{rs}$
		194	6.0 y	β^-	−32.417	0+	
		195	6.5 m	β^-	−29.69		
		196	35.0 m	β^-		0+	
77	Ir	171	1.0 s	α	−26.18 s		
		172	1.7 s	α	−27.32 s		
		173	3.0 s	α	−29.91 s		
		174	4 s	α	−30.89 s		
		175	4 s	α	−33.16 s		
		176	8 s	α	−33.84 s		
		177	21 s	α	−35.82 s		
		178	12 s	β^++EC	−36.27 s		
		179	4 m	EC+β^+	−37.89 s		
		180	1.5 m	EC+β^+	−37.93 s		
		181	5 m	EC+β^+	−39.34 s		
		182	15 m	EC+β^+	−38.98 s		
		183	0.9 h	EC+β^+	−40.09 s	(9/2−)	
		184	3.0 h	EC,β^+	−39.51	5	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
77	Ir	185	14 h	EC+β^+	-40.29 s	5/2(-)	
		186	16 h	EC 98%,β^+ 2%	-39.156	5(+)	
		186	1.7 h	EC,β^+		(2-)	
		187	10.5 h	EC	-39.71 s	3/2+	
		188	41.5 h	EC 99.6%,β^+ 0.4%	-38.323	2-	
		189	13.1 d	EC	-38.48 s	3/2+	
		190	11.8 d	EC	-36.70	(4+)	
		$190m_1$	1.2 h	IT	-36.67	(7+)	
		$190m_2$	3.2 h	EC 95%,IT 5%	-36.52	(11-)	
		191	*37.3%*		-36.698	3/2+	540_g 400_{m1} 0.10_{m2}
		191m	4.9 s	IT	-36.527	11/2-	
		192	74.2 d	β^- 95.4%,EC 4.6%	-34.826	4(-)	1.0×10^3 rs $_o$
		$192m_1$	1.45 m	IT 99+%,β^- 0.017%	-34.768	1(+)	
		$192m_2$	241 y	IT	-34.665	9(+)	
		193	*62.7%*		-34.519	3/2+	110_g
		193m	10.6 d	IT	-34.439	11/2-	0.05_m
		194	19.2 h	β^-	-32.514	1-	
		194m	0.47 y	β^-		(11)	
		195	2.5 h	β^-	-31.692	(3/2+)	
		195m	3.8 h	β^-	-31.57	(11/2-)	
		196	52 s	β^-	-29.44	(0,1-)	
		196m	1.40 h	β^-	-29.01	(10,11)	
		197	9.8 m	β^-	-28.43		
		198	8 s	β^-	-25.52		
78	Pt	173	≤1 s	α	-21.79 s		
		174	0.7 s	α ≈80%	-24.93 s	0+	
		175	2.4 s	α ≈75%	-25.64 s		
		176	6.3 s	α 42%	-28.54 s	0+	
		177	7 s	α 9%	-29.35 s		
		178	21 s	α 7%	-31.63 s	0+	
		179	33 s	α 0.27%	-32.01 s	1/2	
		180	52 s	α ≈0.3%	-34.12 s	0+	
		181	51 s	α ≈0.06%	-34.06 s		
		182	2.6 m	EC+β^+ 99+%,α ≈0.02%	-35.98 s	0+	
		183	7 m	EC+β^+ 99+%, α ≈0.0013%	-35.63 s		
		184	17.3 m	EC+β^+ 99+%, α ≈0.001%	-37.21 s	0+	
		184	42 m?	EC			
		185	71 m	EC+β^+	-36.49 s		
		185	33 m	EC+β^+	-36.49 s		
		186	2.0 h	EC 99+%, α ≈1.4×10^{-4}%	-37.83 s	0+	
		187	2.35 h	EC+β^+	-36.81 s	3/2	
		188	10.2 d	EC 99+%,α 3×10^{-5}%	-37.788	0+	
		189	10.9 h	EC,β^+	-36.57 s	3/2-	
		190	*0.013%* 6×10^{11} y	α	-37.318	0+	800
		191	2.9 d	EC	-35.698	3/2-	
		192	*0.78%*		-36.283	0+	10_{g+m} 2^{rs}_m
		193	50 y	EC,no γ	-34.458	(1/2)-	
		193m	4.3 d	IT	-34.308	(13/2)+	
		194	*32.9%*		-34.765	0+	≈1 rs $_g$ 0.09^{rs}_m
		195	*33.8%*		-32.802	1/2-	27 rs
		195m	4.02 d	IT	-32.543	13/2+	
		196	*25.3%*		-32.652	0+	0.7^{rs}_g 0.05^{rs}_m
		197	18.3 h	β^-	-30.431	1/2-	
		197m	94 m	IT 97%,β^- 3%	-30.032	13/2+	
		198	*7.2%*		-29.921	0+	3.7_g 0.027_m

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
78	Pt	199	30.8 m	β^-	-27.420	(5/2-)	≈15 rs
		199m	14 s	IT	-26.996	(13/2+)	
		200	12.6 h	β^-	-26.60 s	0+	
		201	2.5 m	β^-	-23.74		
79	Au	175	≈0.14 s	α	-17.16 s		
		176	1.2 s	α	-18.40 s		
		177	1.3 s	α	-21.19 s		
		178	2.6 s	α	-22.41 s		
		179	7.5 s	α	-24.75 s		
		181	11 s	α 1.1%	-27.64 s		
		182	21 s	β^++EC 99+%, α? ≈0.04%	-28.18 s		
		183	42 s	α 0.30%	-30.01 s		
		184	53 s	β^++EC 99+%,α 0.022%	-30.22 s		
		185	4.3 m	EC+β^+ 99.91%, α 0.09%	-31.73 s		
		185	6.8 m	EC+β^+	-31.73 s		
		186	11 m	EC+β^+	-31.69 s	3	
		186	≤2 m	EC+β^+	-31.69 s		
		187	8 m	EC+β^+,α?	-32.87 s	1/2	
		188	8.8 m	EC+β^+	-32.49 s	1	
		189	28.7 m	EC+β^+	-33.41 s	1/2+	
		189m	4.6 m	EC+β^+,IT?	-33.16 s	11/2-	
		190	43 m	EC 98%,β^+ 2%	-32.876	1-	
		191	3.2 h	EC	-33.87	3/2+	
		191m	0.9 s	IT	-33.60	(11/2-)	
		192	5.0 h	EC ≈99%,β^+ ≈1%	-32.768	1-	
		193	17.5 h	EC,β^+?	-33.36 s	3/2+	
		193m	3.9 s	IT 99.97%,EC 0.03%	-33.07 s	11/2-	
		194	39.5 h	EC ≈97%,β^+ ≈3%	-32.256	1-	
		195	183 d	EC	-32.572	3/2+	
		195m	30.6 s	IT	-32.253	11/2-	
		196	6.18 d	EC 93.0%,β^+ 5×10^{-5}%, β^- 7.0%	-31.162	2-	
		$196m_1$	8.2 s	IT	-31.077	5+	
		$196m_2$	9.7 h	IT	-30.567	12-	
		197	*100%*		-31.150	3/2+	98.8
		197m	7.7 s	IT	-30.741	11/2-	
		198	2.696 d	β^-	-29.591	2-	2.5×10^4
		198m	2.30 d	IT	-28.779	(12-)	
		199	3.14 d	β^-	-29.104	3/2+	≈30 rs g
		200	48.4 m	β^-	-27.30	1(-)	
		200m	18.7 h	β^- ≈84%,IT ≈16%	-≈26.3	12(-)	
		201	26 m	β^-	-26.40	(3/2+)	
		202	29 s	β^-	-23.86	(1-)	
		203	53 s	β^-	-22.98 s		
		204	4 s?	β^-			
		204	40 s	β^-			
80	Hg	177	≈0.2 s	α	-12.65 s		
		178	0.5 s	α ≈84%,[EC+β^+] ≈16%	-15.93 s	0+	
		179	1.09 s	α ≈53%,EC+β^+ ≈47%, (EC+β^+)p	-16.80 s		
		179	3.5 s?	α	-16.80 s		
		180	2.9 s	α	-19.86 s	0+	
		180	5.9 s?	α			
		181	3.6 s	β^++EC 74%,α 26%, (β^++EC)p 0.014%, (β^++EC)α 9×10^{-6}%	-20.79 s	1/2(-)	
		182	11 s	EC+β^+ 91%,α 9%	-23.21 s	0+	
		183	8.8 s	EC 61%,β^+ 27%, α 12%, (EC+β^+)p 3×10^{-4}%	-23.69 s	1/2	
		184	30.6 s	EC+β^+ 98.7%,α 1.3%	-26.04 s	0+	
		185(g)	48 s	EC+β^+ ≤95%,α ≥5%	-26.14 s	1/2-	
		185(m)	17 s	α,IT?			
		185	155 s	?			
		186	1.4 m	EC 96%,β^+ 4%, α 0.016%	-28.35 s	0+	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
80	Hg	187	1.6 m	EC+β^+,α >2.5×10^{-4}%	−28.06 s		
		187	2.4 m	EC+β^+,α >1.2×10^{-4}%	−28.06 s	3/2	
		187	3.0 m	EC+β^+,α			
		188	3.3 m	EC+β^+	−29.88 s	0+	
		189	8.7 m	EC+β^+	−29.21 s	(13/2+)	
		189	7.5 m	EC+β^+	−29.21 s	3/2−	
		190	20 m	EC	−30.96	0+	
		191	≈49 m	EC+β^+	−30.48	(3/2−)	
		191m	51 m	EC+β^+	−≈30.34	(13/2+)	
		192	4.9 h	EC	−31.97 s	0+	
		193	4 h	EC,β^+?	−31.02 s	3/2−	
		193m	11 h	EC 92%,β^+ 0.34%, IT 8%	−30.88 s	13/2+	
		194	260 y	EC,no γ	−32.206	0+	
		194	0.40 s	?			
		195	10 h	EC	−31.05	1/2−	
		195m	41 h	EC 50%,IT 50%	−30.87	13/2+	
		196	*0.15%*		−31.846	0+	3.0×10^{3} sc g; 120 sc m
		197	64.1 h	EC	−30.735	1/2−	
		197m	23.8 h	IT 93%,EC 7%	−30.436	13/2+	
		198	*10.0%*		−30.964	0+	0.018 m
		199	*16.8%*		−29.557	1/2−	2×10^{3}
		199m	42.6 m	IT	−29.025	13/2+	
		200	*23.1%*		−29.514	0+	<60
		201	*13.2%*		−27.672	3/2−	<60
		202	*29.8%*		−27.356	0+	5.0
		203	46.8 d	β^-	−25.277	5/2−	
		204	*6.9%*		−24.703	0+	0.4 rs
		205	5.2 m	β^-	−22.299	1/2−	
		206	8.1 m	β^-	−20.955	0+	
81	Tl	184	11 s	β^++EC 98%,α 2%	−16.90 s		
		185m	1.7 s	α,IT	−18.66 s	(9/2−)	
		186	28 s	(β^+,EC) 99+%, α? ≈0.006%	−19.86 s		
		186m	3 s	IT	−19.49 s		
		187m	16 s	α,IT	−≈21.60 s	(9/2−)	
		188	71 s	β^+,EC	−22.29 s	(7)	
		189	1.4 m	β^++EC	−24.02 s		
		189	2.3 m	β^++EC	−24.02 s		
		190	2.6 m	β^+,EC	−24.16	(2−)	
		190	3.7 m	β^+,EC		(7+)	
		191	5.2 m	EC 98%,β^+ 2%	−25.67		
		192	10.8 m	EC+β^+	−25.59 s	(7+)	
		192	10.6 m	EC+β^+	−25.59 s	(2−)	
		193	22 m	EC ≧96%,β^+ ≦4%	−27.02 s	1/2+	
		193m	2.1 m	IT		(9/2−)	
		194	33.0 m	EC+β^+	−26.81 s	2−	
		194m	32.8 m	EC+β^+	−≈26.51 s	(7+)	
		195	1.16 h	EC 99.3%,β^+ 0.7%	−27.85	1/2+	
		195m	3.6 s	IT	−27.37	9/2−	
		196	1.84 h	EC+β^+	−27.35 s	2(−)	
		196m	1.41 h	EC+β^+ 96.2%,IT 3.8%	−26.95 s	(7+)	
		197	2.84 h	EC 99.5%,β^+ 0.5%	−28.33 s	1/2+	
		197m	0.54 s	IT	−27.72 s	9/2−	
		198	5.3 h	EC ≈99.3%,β^+ ≈0.7%	−27.50	2−	
		198m	1.87 h	EC+β^+ 56%,IT 44%	−26.96	7+	
		199	7.4 h	EC	−28.08	1/2+	
		200	26.1 h	EC 99.65%,β^+ 0.35%	−27.060	2−	
		201	73 h	EC	−27.185	1/2+	
		202	12.2 d	EC	−25.988	2−	
		203	*29.5%*		−25.769	1/2+	10
		204	3.77 y	β^- 97.4%,EC 2.6%	−24.353	2−	22 rs
		205	*70.5%*		−23.837	1/2+	0.10 rs g
		206	4.20 m	β^-	−22.269	0−	
		206m	3.6 m	IT	−19.626	(12−)	
		207	4.77 m	β^-	−21.041	1/2+	
		207m	1.3 s	IT	−19.700	11/2−	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
81	Tl	208	3.053 m	β^-	−16.768	(5+)	
		209	2.2 m	β^-	−13.650	(1/2+)	
		210	1.30 m	β^-,β^-n ≈0.007%	−9.251		
82	Pb	185	≈2 s	α	−11.74 s		
		186	8 s	α ≈2.4%	−14.33 s	0+	
		187	17 s	α ≈2.0%	−14.94 s		
		188	25 s	EC+β^+ 97%,α 3%	−17.50 s	0+	
		189	51 s	EC+β^+ 99+%,α ≈0.4%	−17.86 s		
		190	1.2 m	EC+β^+ 99.8%,α 0.2%	−20.22 s	0+	
		191	1.3 m	EC+β^+ 99+%,α 0.013%	−20.23 s		
		192	2.3 m	EC+β^+ 99+%,α 0.007%	−22.29 s	0+	
		193	5.8 m	EC+β^+	−22.07 s	(13/2+)	
		194	11 m	EC+β^+	−23.81 s	0+	
		195	16.4 m	EC+β^+	−23.55 s	(13/2+)	
		196	37 m	EC	−25.15 s	0+	
		197	?	EC+β^+	−24.63 s	(3/2−)	
		197m	42 m	EC+β^+ 81%,IT 19%	−24.31 s	(13/2+)	
		198	2.4 h	EC	−25.90 s	0+	
		199	1.5 h	EC ≈98.6%,β^+ ≈1.4%	−25.28	5/2−	
		199m	12.2 m	IT 93%,EC+β^+ 7%	−24.86	13/2+	
		200	21.5 h	EC	−26.16 s	0+	
		201	9.4 h	EC 99+%,β^+ ≤0.034%	−25.327	5/2−	
		201m	61 s	IT	−24.699	13/2+	
		202	≈3×10^5 y	EC,no γ	−25.942	0+	
		202m	3.62 h	IT 90.5%,EC 9.5%	−23.772	9−	
		203	52.0 h	EC	−24.794	5/2−	
		$203m_1$	6.1 s	IT	−23.969	13/2+	
		$203m_2$	0.48 s	IT	−21.844	29/2−	
		204	*1.42%*		−25.117	0+	0.7
		204m	66.9 m	IT	−22.932	9−	
		205	1.4×10^7 y	EC,no γ	−23.777	5/2−	3.8^{rs}
		206	*24.1%*		−23.795	0+	0.03_9
		207	*22.1%*		−22.463	1/2−	0.71
		207m	0.81 s	IT	−20.830	13/2+	
		208	*52.3%*		−21.759	0+	5.0×10^{-4}
		209	3.25 h	β^-,no γ	−17.624	9/2+	
		210	22.3 y	β^- 99+%,α 1.7×10^{-6}%	−14.738	0+	0.5
		211	36.1 m	β^-	−10.492	(9/2)+	
		212	10.64 h	β^-	−7.562	0+	
		213	10.2 m	β^-	−3.14 s		
		214	26.8 m	β^-	−0.185	0+	
83	Bi	189	<1.5 s	α	−9.87 s		
		190	5.4 s	α ≈90%	−10.85 s		
		191	13 s	α ≈40%	−13.05 s		
		191m	≈20 s	α			
		192	42 s	α ≈20%	−13.67 s		
		193	64 s	α ≈60%	−15.56 s		
		193m	3.5 s	α ≈25%			
		194	1.7 m	β^++EC 99+%,α <0.2%	−15.98	(10−)	
		195	2.8 m	α <0.2%	−17.68		
		195m	90 s	α 4%			
		196	4.5 m	β^++EC	−17.76 s		
		197(m)	8 m	β^++EC 99.89%, α 0.11%			
		198	11.8 m	EC+β^+	−19.30 s	(7+)	
		198m	7.7 s	IT	−19.05 s	(10−)	
		199(g)	27 m	EC	−20.61 s	9/2−	
		199(m)	24.7 m	α	−≈20.00 s		
		200	36 m	EC,β^+(weak)	−20.46 s	7(+)	
		200m	0.40 s	IT	−20.03 s	10(−)	
		201	1.8 h	EC+β^+	−21.41 s	9/2−	
		201m	59 m	EC+β^+,IT,α ≥0.02%	−20.56 s	(1/2+)	
		202	1.7 h	EC 99.5%,β^+ 0.5%	−21.04 s	5(+)	
		203	11.8 h	EC ≈99.7%,β^+ ≈0.3%	−21.60	9/2−	
		204	11.2 h	EC	−20.82 s	6+	
		205	15.3 d	EC 99.90%,β^+ 0.10%	−21.070	9/2−	
		206	6.243 d	EC,β^+? 8×10^{-4}%	−20.033	6+	
		207	38 y	EC 99+%,β^+ 0.012%	−20.058	9/2−	
		208	3.68×10^5 y	EC	−18.879	(5)+	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
83	Bi	209	*100%*		−18.268	9/2−	0.019^{rs}_{g} 0.014^{rs}_{m}
		210	5.01 d	β^- 99+%,α 1.3×10^{-4}%	−14.801	1−	0.050^{sc}
		210m	3.0×10^6 y	α	−14.530	9−	
		211	2.15 m	α 99.72%,β^- 0.28%	−11.865	(9/2)−	
		212	60.60 m	β^- 64.0%, $\beta^-\alpha$ 0.014%,α 36.0%	−8.135	1(−)	
		$212m_1$	25 m	α ≤93%,β^- ≥7%	−7.88	[9−]	
		$212m_2$	9 m	β^- ≤100%		[15−]	
		213	45.6 m	β^- 97.8%,α 2.2%	−5.243	(9/2−)	
		214	19.7 m	β^- 99+%, $\beta^-\alpha$ 0.0031%, α 0.021%	−1.209	(1−)	
		215	7 m	β^-	1.71		
84	Po	193	≤1 s	α	−8.31 s		
		194	0.6 s	α	−10.81 s	0+	
		195(g)	4.5 s	α	−11.06 s		
		195(m)	2.0 s	α			
		196	5 s	α	−13.21 s	0+	
		197	58 s	α 90%	−13.23 s		
		197m	26 s	α			
		198	1.78 m	α 70%,EC+β^+ 30%	−15.07 s	0+	
		199	5.2 m	EC+β^+ 88%,α 12%	−15.05 s	(3/2−)	
		199m	4.2 m	EC+β^+ 61%,α 39%		(13/2+)	
		200	11.4 m	EC+β^+ 86%,α 14%	−16.74 s	0+	
		201	15.2 m	EC+β^+ 98.4%,α 1.6%	−16.41 s	3/2(−)	
		201m	8.9 m	IT 53%,EC+β^+ 44%, α 2.9%	−15.98 s	(13/2+)	
		202	44 m	EC+β^+ 98.0%,α 2.0%	−17.78 s	0+	
		203	33 m	EC+β^+ 99.89%, α 0.11%	−17.36	5/2−	
		203m	1.2 m	IT 96%,EC+β^+ 4%	−16.72	(13/2+)	
		204	3.57 h	EC 99.4%,α 0.6%	−18.25 s	0+	
		205	1.80 h	EC+β^+ 99.5%,α 0.5%	−17.576	5/2−	
		206	8.8 d	EC 94.5%,α 5.5%	−18.190	0+	
		207	5.7 h	EC 99.5%,β^+ 0.5%, α 0.008%	−17.150	5/2−	
		207m	2.8 s	IT	−15.766	19/2−	
		208	2.90 y	α 99+%,EC 0.0018%	−17.475	0+	
		209	102 y	α 99.74%,EC 0.26%	−16.373	1/2−	
		210	138.38 d	α	−15.963	0+	$<0.03^{rs}_{g}$ $<5\times10^{-4}{}^{rs}_{m}$ $<0.002_{a}$
		211	0.516 s	α	−12.444	(9/2+)	
		211m	25 s	α	−10.982	(25/2+)	
		212	0.30 μs	α	−10.381	0+	
		212m	45 s	α	−7.476	[16+]	
		213	4 μs	α	−6.663	9/2+	
		214	164 μs	α	−4.479	0+	
		215	1.78 ms	α 99+%,β^- 2.3×10^{-4}%	−0.540	(9/2)+	
		216	0.15 s	α	1.769	0+	
		217	<10 s	α	5.96 s		
		218	3.05 m	α 99+%,β^- 0.018%	8.355	0+	
85	At	196	0.3 s	α	−4.05 s		
		197	0.4 s	α	−6.03 s		
		198	4.9 s	α	−6.67		
		198m	1.5 s	α			
		199	7.2 s	α	−8.47		
		200(g)	42 s	α 53%,EC+β^+ 47%	−8.67 s		
		200(m)	4.3 s	α			
		201	1.5 m	α 71%,EC+β^+ 29%	−10.52 s		
		202	3.0 m	EC+β^+ 85%,α 15%	−10.52 s		
		203	7.3 m	EC+β^+ 69%,α 31%	−11.97 s		
		204	9.1 m	EC+β^+ 95.6%,α 4.4%	−11.97 s	(5+)	
		205	26 m	EC 87%,β^+ 3%,α 10%	−12.96 s	9/2−	
		206	31 m	EC 82%,β^+ 17%, α 1.0%	−12.73 s	(5+)	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
85	At	207	1.8 h	EC+β^+ ≈90%,α ≈10%	−13.31	9/2−	
		208	1.63 h	EC+β^+ 99.4%,α 0.6%	−12.64 s	(6+)	
		209	5.4 h	EC 95.9%,α 4.1%	−12.888	9/2−	
		210	8.3 h	EC+β^+ 99.82%, α 0.18%	−11.976	5+	
		211	7.21 h	EC 58.1%,α 41.9%	−11.653	9/2−	
		212	0.315 s	α	−8.625		
		212m	0.12 s	α	−8.403		
		213	0.11 μs	α,no γ	−6.589	9/2−	
		214	≈2 μs	α	−3.389		
		215	0.10 ms	α	−1.262	(9/2)−	
		216	0.30 ms	α	2.237	1(−)	
		217	32.3 ms	α 99+%,β^- 0.012%	4.382	(9/2−)	
		218	≈2 s	α 99.9%,β^- 0.1%	8.099		
		219	0.9 m	α ≈97%,β^- ≈3%	10.53		
86	Rn	200	1 s	α	−3.74 s	0+	
		201(g)	7.0 s	α	−3.95 s		
		201(m)	3.8 s	α			
		<202	<1 s?	α			
		202	9.9 s	α >70%	−5.88 s	0+	
		203	45 s	α 65%,EC+β^+ 35%	−6.00 s		
		203m	28 s	α	−≈5.95 s		
		204	75 s	α ≈72%,EC+β^+ ≈28%	−7.77 s	0+	
		205	170 s	EC+β^+ 77%,α 23%	−7.60 s		
		206	5.7 m	α 64%,EC+β^+ 36%	−8.97 s	0+	
		207	9.3 m	EC+β^+ 77%,α 23%	−8.69	5/2−	
		208	24 m	α 52%,EC+β^+ 48%	−9.56 s	0+	
		209	29 m	EC 80%,β^+ 3%,α 17%	−8.994	5/2−	
		210	2.4 h	α 96%,EC 4%	−9.608	0+	
		211	14.6 h	EC+β^+ 74%,α 26%	−8.761	1/2−	
		212	23 m	α	−8.666	0+	
		213	25.0 ms	α	−5.706	(9/2+)	
		214	0.27 μs	α	−4.328	0+	
		215	2.3 μs	α,no γ	−1.179	(9/2+)	
		216	45 μs	α	0.245	0+	
		217	0.54 ms	α	3.649	9/2+	
		218	35 ms	α	5.212	0+	
		219	3.96 s	α	8.831	(5/2)+	
		220	55.6 s	α	10.599	0+	<0.2 rs
		221	25 m	β^- ≈80%,α ≈20%	14.38 s		
		222	3.8235 d	α	16.370	0+	0.73 rs
		223	43 m	β^-			
		224	1.8 h	β^-	22.26 s	0+	
		225	4.5 m	β^-	27.59 s		
		226	6.0 m	β^-		0+	
87	Fr	203	0.7 s	α,β^++EC	1.23		
		204	2.1 s	α	0.92 s		
		205	3.7 s	α	−1.04 s		
		206	16.0 s	α 85%,EC+β^+ 15%	−1.18 s		
		207	14.8 s	α 93%,EC+β^+ 7%	−2.65 s	(9/2−)	
		208	58.0 s	α 74%,EC+β^+ 26%	−2.77 s		
		209	50.0 s	α 89%,EC+β^+ 11%	−3.76 s	9/2−	
		210	3.2 m	α,EC+β^+	−3.64 s		
		211	3.1 m	α,EC+β^+	−4.22		
		212	19.3 m	EC+β^+ 56%,α 44%	−3.69 s		
		213	34.7 s	α 99.45%,EC 0.55%	−3.556	(9/2−)	
		214	5.0 ms	α	−0.965	(1−)	
		214m	3.4 ms	α	−0.843	(9−)	
		215	0.12 μs	α,no γ	0.309	9/2−	
		216	0.70 μs	α,no γ	2.975		
		217	22 μs	α,no γ	4.307	9/2−	
		218	≈0.7 ms	α	7.050		
		219	0.020 s	α	8.617	(9/2)−	
		220	27.4 s	α 99.65%,β^- 0.35%	11.470		
		221	4.8 m	α	13.265	(5/2−)	
		222	14.4 m	β^- 99+%,α 0.01−0.1%	16.338		
		223	21.8 m	β^- 99+%,α ≈0.005%	18.382	(3/2)	
		224	2.7 m	β^-	21.71 s		
		225	3.9 m	β^-	23.79 s		
		226	48 s	β^-	27.46		

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
87	Fr	227	2.4 m	β^-	29.58		
		228	39 s	β^-			
		229	0.8 m	β^-			
88	Ra	206	0.4 s	α,(EC+β^+)?	3.96 s	0+	
		207	1.3 s	α,(EC+β^+)?	3.70 s		
		208	1.5 s	α	1.93 s	0+	
		209	4.7 s	α	1.97 s		
		210	3.7 s	α	0.61 s	0+	
		211	14 s	α,(EC+β^+)?	0.78	(5/2−)	
		212	13.0 s	α,(EC+β^+)?	−0.11 s	0+	
		213	2.7 m	α 80%,EC+β^+ 20%	0.290	(1/2−)	
		213m	2.1 ms	IT ≈99%,α ≈1%	2.060	(17/2−,13/2+)	
		214	2.46 s	α 99+%,EC 0.059%	0.090	0+	
		215	1.6 ms	α	2.531		
		216	0.18 μs	α	3.285	0+	
		217	1.6 μs	α	5.881		
		218	14 μs	α	6.644	0+	
		219	10 ms	α	9.377		
		220	23 ms	α	10.263	0+	
		221	30 s	α	12.957		
		222	38 s	α	14.312	0+	
		223	11.435 d	α	17.235	1/2+	134 rs
		224	3.66 d	α	18.813	0+	12 rs
		225	14.8 d	β^-	21.987	(3/2)+	
		226	1.60×10^3 y	α	23.666	0+	8
		227	42.2 m	β^-	27.185	(3/2+)	
		228	5.76 y	β^-	28.941	0+	36 sc
		229	4.0 m	β^-	32.72 s		
		230	93 m	β^-	34.56 s	0+	
89	Ac	209	0.10 s	α	9.12 s		
		210	0.35 s	α	8.86 s		
		211	0.25 s	α,EC+β^+	7.40 s		
		212	0.93 s	α	7.18 s		
		213	0.80 s	α,no γ	6.17 s	(9/2−)	
		214	8.2 s	α ≥86%,EC ≤14%	6.14 s		
		215	0.17 s	α 99.91%, EC+β^+ 0.09%	5.95		
		216	≈0.33 ms	α	7.98 s		
		216m	0.33 ms	α	8.02 s		
		217	0.11 μs	α,no γ	8.70	(9/2−)	
		218	0.27 μs	α,no γ	10.837		
		219	7 μs	α,no γ	11.560	(9/2−)	
		220	26 ms	α	13.747		
		221	52 ms	α	14.518		
		222	5 s	α	16.617		
		222m	66 s	α ≥90%, IT <10%,EC ≈1%			
		223	2.2 m	α 99%,EC 1%	17.825	(5/2−)	
		224	2.9 h	EC ≈90%,α ≈10%	20.219		
		225	10.0 d	α	21.626	(3/2−)	
		226	29 h	β^- 83%,EC 17%, α 0.006%	24.30	(1−)	
		227	21.773 y	β^- 98.62%,α 1.38%	25.850	3/2−	900 sc
		228	6.13 h	β^-	28.895	(3+)	
		229	62.7 m	β^-	30.72	(3/2+)	
		230	122 s	β^-	33.76 s		
		231	7.5 m	β^-	35.91	(1/2+)	
		232	35 s	[β^-]	39.15 s		
90	Th	215	1.2 s	α	10.87	(1/2−)	
		216	0.028 s	α	10.39 s	0+	
		217	0.25 ms	α	12.141		
		218	0.10 μs	α	12.362	0+	
		219	1.05 μs	α	14.470		
		220	10 μs	α	14.663	0+	
		221	1.7 ms	α	16.934		
		222	2.8 ms	α	17.197	0+	
		223	0.66 s	α	19.256		
		224	1.04 s	α	19.993	0+	

TABLE OF NUCLIDES

Z	El	Nuclide A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
90	Th	225	8.0 m	α ≈90%,EC ≈10%	22.303	(3/2+)	
		226	30.9 m	α	23.189	0+	
		227	18.718 d	α	25.806	3/2+	200 f^{s}
		228	1.9131 y	α	26.758	0+	100 r^{s}
		229	7.3×10^{3} y	α	29.581	5/2+	30 f
		230	8.0×10^{4} y	α	30.861	0+	40
		231	25.52 h	β^-	33.812	5/2+	
		232	*100%* 1.41×10^{10} y	α	35.447	0+	7.4
		233	22.3 m	β^-	38.732	1/2+	1.4×10^{3} sc
		234	24.10 d	β^-	40.612	0+	2.0
		235	6.9 m	β^-	44.15 s		
		236	37 m	β^-	46.64 s	0+	
91	Pa	216	0.20 s	α			
		217	≈10 ms	α			
		222	5.7 ms	α	21.959		
		223	6 ms	α	22.330		
		224	0.9 s	α	23.798		
		225	1.8 s	α	24.320		
		226	1.8 m	α 74%,EC 26%	26.029		
		227	38.3 m	α ≈85%,EC ≈15%	26.832	(5/2−)	
		228	22 h	EC ≈98%,α ≈2%	28.870	3+	
		229	1.4 d	EC 99.75%,α 0.25%	29.887	(5/2+)	
		230	17.7 d	EC 90%,β^- 10%, α 0.0032%	32.166	(2−)	1.5×10^{3} f^{s}
		231	3.28×10^{4} y	α	33.423	3/2−	200
		232	1.31 d	β^-	35.934	(2−)	800 r^{s} 700 f^{s}
		233	27.0 d	β^-	37.487	3/2−	20 $_{m}$ 19 $_{g}$
		234	6.75 h	β^-	40.349	4(+)	$<5\times10^{3}$ f^{s}
		234m	1.175 m	β^- 99.87%,IT 0.13%	≈40.43	(0−)	<500 f^{s}
		235	24.2 m	β^-	42.32	(3/2−)	
		236	9.1 m	β^-	45.54	(1−)	
		237	8.7 m	β^-	47.64	(1/2+)	
		238	2.3 m	β^-	51.27	(3−)	
92	U	226	0.5 s	α	27.186	0+	
		227	1.1 m	α	28.88 s		
		228	9.1 m	α ≥95%,EC ≤5%	29.221	0+	
		229	58 m	EC ≈80%,α ≈20%	31.201	(3/2+)	
		230	20.8 d	α	31.607	0+	20 f^{s}
		231	4.2 d	EC 99+%,α 0.0055%	33.78	(5/2)	≈300 f^{s}
		232	72 y	α	34.597	0+	74 76 f
		233	1.592×10^{5} y	α	36.915	5/2+	530 f 46
		234	*0.0054%* 2.45×10^{5} y	α	38.143	0+	100 $_{g,m}$
		235	*0.720%* 7.038×10^{8} y	α	40.916	7/2−	580 f 98
		235m	26 m	IT	40.916	1/2+	
		235f	20 ns?	SF			
		236	2.342×10^{7} y	α	42.442	0+	5.1
		236f	0.12 μs	SF	44.79		
		237	6.75 d	β^-	45.389	1/2+	400
		238	*99.275%* 4.468×10^{9} y	α	47.307	0+	2.7
		238f	0.19 μs	IT ≈96%,SF ≈4%	49.866	(0+)	
		239	23.5 m	β^-	50.572	5/2+	22 r^{s} 15 f^{s}
		240	14.1 h	β^-	52.712	0+	
93	Np	229	4.0 m	α ≥50%,EC ≤50%	33.758		
		230	4.6 m	α 99+%,EC+β^+ ≤0.97%	35.232		
		231	48.8 m	EC <99%,α >1%	35.626	(5/2)	

TABLE OF NUCLIDES

Z	El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
93	Np	232	14.7 m	EC	37.29 s		
		233	36.2 m	EC 99+%,α ≈0.001%	38.01 s	(5/2+)	
		234	4.4 d	EC 99.95%,β^+ 0.05%	39.951	(0+)	$1.0\times10^3\,{}^{fs}_{f}$
		235	396 d	EC 99+%,α 0.0016%	41.040	5/2+	$160\,{}^{fs}_{22.5\ n}$
		236	1.1×10^5 y	EC 91%,β^- 9%		(6-)	$3\times10^3{}_{f}$
		236	22.5 h	EC 50%,β^- 50%	43.426	1(-)	
		237	2.14×10^6 y	α	44.869	5/2+	180
		237f	45 ns	SF	47.57		
		238	2.117 d	β^-	47.453	2+	$2.1\times10^3\,{}^{fs}_{f}$
		239	2.35 d	β^-	49.306	5/2+	$32\,{}^{rs}_{m}$ $\approx20\,{}^{fs}_{g}$
		240	67 m	β^-	52.21	(5+)	
		240m	7.5 m	β^- 99.89%,IT 0.11%		1(-)	
		241	16.0 m	β^-	54.31		
94	Pu	232	34 m	EC ≥80%,α ≤20%	38.362	0+	
		233	20.9 m	EC 99.88%,α 0.12%	40.042		
		234	8.8 h	EC 94%,α 6%	40.342	0+	
		235	25.6 m	EC 99+%,α 0.003%	42.16	(5/2)+	
		235f	30 ns	SF	43.86		
		236	2.85 y	α	42.889	0+	$150\,{}^{fs}_{f}$
		$236f_1$	0.03 ns	SF			
		$236f_2$	0.03 μs	SF	46.39		
		237	45.4 d	EC 99+%,α 0.0033%	45.087	7/2-	$2.1\times10^3\,{}^{fs}_{f}$
		237m	0.18 s	IT	45.233	1/2+	
		$237f_1$	0.11 μs	SF	47.39		
		$237f_2$	1.1 μs	SF	47.69		
		238	87.74 y	α	46.161	0+	$500\,{}^{rs}_{17\,fs}$
		$238f_1$	0.6 ns	SF	48.56		
		$238f_2$	6 ns	SF	49.86		
		239	2.41×10^4 y	α	48.585	1/2+	$742,$ 271
		$239f_1$	8 μs	SF	50.79		
		$239f_2$	0.01 μs?	SF			
		240	6.57×10^3 y	α	50.123	0+	290
		240f	3.8 ns	SF	52.52	(0+)	
		241	14.4 y	β^- 99+%,α 0.0024%	52.953	5/2+	$1.01\times10^3,{}_{f}$ 370
		$241f_1$	24 μs	SF	54.95		
		$241f_2$	30 ns?	SF			
		242	3.76×10^5 y	α	54.715	0+	19 $<0.2\,{}_{f}$
		$242f_1$	4 ns	SF			
		$242f_2$	28 ns	SF			
		243	4.956 h	β^-	57.752	7/2+	$200\,{}^{fs}_{f}$ $100\,{}^{rs}$
		243f	0.05 μs	SF	59.55		
		244	8.1×10^7 y	α	59.803	0+	1.7
		244f	0.4 ns	SF			
		245	10.5 h	β^-	63.157	(9/2-)	150
		246	10.85 d	β^-	65.29	0+	
95	Am	232	1.4 m?	$[EC+\beta^+]$,$(EC+\beta^+)$SF			
		234	2.6 m	$[EC+\beta^+]$,$(EC+\beta^+)$SF	44.46 s		
		235f	?	SF			
		236f	?	SF			
		237	1.22 h	EC 99+%,α 0.025%	46.64 s	5/2(-)	
		237f	5 ns	SF	48.74 s		
		238	1.63 h	EC 99+%,α 1.0×10^{-4}%	48.417	1+	
		238f	35 μs	SF	50.72		
		239	11.9 h	EC 99+%,α 0.010%	49.389	5/2-	
		239f	0.16 μs	SF	51.89		
		240	50.8 h	EC 99+%,α 1.9×10^{-4}%	51.443	(3-)	
		240f	0.9 ms	SF	54.04		

TABLE OF NUCLIDES

Z	Nuclide El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
95	Am	241	433 y	α	52.932	5/2−	562_g 62_m 3.2_f
		241f	1.5 μs	SF	55.13		
		242	16.01 h	β⁻ 82.7%,EC 17.3%	55.463	1−	$2.1\times10^3{}_f^{rs}$
		242m	152 y	IT 99.52%,α 0.48%	55.511	5−	$7.4\times10^3{}_f^{rs}$ $1.6\times10^3{}_f^{rs}$
		242f	14.0 ms	SF	57.76		
		243	7.37×10^3 y	α	57.170	5/2−	80_m^{rs} 6_g^{rs}
		243f	5 μs	SF	59.17		
		244	10.1 h	β⁻	59.877	(6−)	$2.2\times10^3{}_f^{rs}$
		244m	26 m	β⁻ 99+%,EC 0.036%	59.948	(1−)	$1.6\times10^3{}_f^{rs}$
		244f	1.1 ms	SF	61.48		
		245	2.05 h	β⁻	61.897	(5/2)+	
		245f	0.6 μs	SF			
		246	39 m	β⁻		(7−)	
		246	25.0 m	β⁻	64.92	(2−)	
		246f	0.07 ms	SF			
		247	24 m	β⁻	67.13 s	(5/2)	
96	Cm	238	2.3 h	EC <90%,α >10%	49.398	0+	
		239	2.9 h	EC	51.09 s		
		240	27 d	α	51.712	0+	
		240f	10 ps	SF			
		241	32.8 d	EC 99.0%,α 1.0%	53.696	1/2+	
		241f	15 ns	SF	55.70		
		242	162.8 d	α	54.802	0+	20 $<5_f^{rs}$
		$242f_1$	0.04 ns	SF			
		$242f_2$	0.2 μs	SF	57.60		
		243	28.5 y	α 99.74%,EC 0.26%	57.177	5/2+	$1.0\times10^3{}_a^{rs}$ 610_f 130
		243f	0.04 μs	SF	58.68		
		244	18.11 y	α	58.450	0+	14 1.0_f
		$244(f_1)$	<5 ps?	[SF]			
		$244(f_2)$	>100 ns	SF	61.45		
		245	8.5×10^3 y	α	61.001	7/2+	2.0×10^3, 350
		245f	13 ns	SF	62.70		
		246	4.7×10^3 y	α	62.616	0+	1.3 0.2_f
		247	1.6×10^7 y	α	65.530	9/2−	100_f^{sc} 60
		248	3.5×10^5 y	α 91.74%,SF 8.26%	67.389	0+	4^{sc} 0.3_f
		249	65 m	β⁻	70.748	1/2+	2^{rs}
		250	$\leq1.1\times10^4$ y	SF	72.986	0+	$\approx80^{rs}$
		251	16.8 m	β⁻	76.67 s	(1/2+)	
97	Bk	240	5 m	EC+β⁺, (EC+β⁺)SF 0.001%	55.71 s		
		242	7 m	EC	57.80 s		
		$242f_1$	0.6 μs	SF			
		$242f_2$	10 ns	SF			
		243	4.5 h	EC 99.85%,α 0.15%	58.685	(3/2−)	
		243f	5 ns	SF	60.88		
		244	4.4 h	EC 99+%,α 0.006%	60.646		
		244f	0.8 μs	SF			
		245	4.90 d	EC 99.88%,α 0.12%	61.811	3/2−	
		245f	2 ns	SF			
		246	1.80 d	EC	64.02 s	(2−)	
		247	1.4×10^3 y	α	65.484	(3/2−)	

TABLE OF NUCLIDES

Z	El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
97	Bk	248	23.5 h	β^- 70%,EC 30%	67.99 s	(1−)	
		248	>9 y	?	67.99 s	(6+)	
		249	0.88 y	β^- 99+%,α 0.0015%	69.848	7/2+	1.0×10^3 rs o
		250	3.22 h	β^-	72.950	2−	1.0×10^3 rs f
		251	56 m	β^-	75.25 s	(3/2−)	
98	Cf	240	1.1 m	α	58.03 s	0+	
		241	4 m	α	59.19 s		
		242	3.5 m	α	59.332	0+	
		243	11 m	[EC] ≈86%,α ≈14%	60.91 s		
		244	19 m	α	61.465	0+	
		245	44 m	EC ≈70%,α ≈30%	63.377		
		246	35.7 h	α	64.096	0+	
		246f	0.05 μs	SF			
		247	3.15 h	EC 99.96%,α 0.04%	66.15 s	(7/2+)	
		248	333 d	α	67.243	0+	
		249	351 y	α	69.722	9/2−	1.63×10^3 f 480 sc
		250	13.1 y	α	71.170	0+	2.0×10^3 sc <350 fs
		251	9.0×10^2 y	α	74.127	1/2+	4×10^3 sc f 2.9×10^3 sc
		252	2.64 y	α 96.91%,SF 3.09%	76.031	0+	32 sc f 20
		253	17.8 d	β^- 99.69%,α 0.31%	79.299	(7/2+)	1.3×10^3 fs
		254	60.5 d	SF 99.69%,α 0.31%	81.342	0+	100 fs o
		255	≈2 h?	[β^-]			
		256	12 m	SF		0+	
99	Es	243	21 s	α	64.80 s		
		244	37 s	EC+β^+ 96%,α 4%	65.97 s		
		245	1.3 m	EC 60%,α 40%	66.38 s		
		246	7.7 m	EC+β^+ 90%,α 10%	67.93 s		
		247	4.7 m	EC ≈93%,α ≈7%	68.550		
		248	28 m	EC ≈99.7%,α ≈0.3%	70.22 s		
		249	1.70 h	EC 99.4%,α 0.6%	71.116	(7/2+)	
		250	8.6 h	EC	73.17 s	(6+)	
		250	2.1 h	EC	73.17 s	(1−)	
		251	33 h	EC 99.5%,α 0.5%	74.507	(3/2−)	
		252	472 d	α 78%,EC 22%	77.15 s	(5−)	
		253	20.47 d	α	79.012	7/2+	160 m <3 g <60 fs
		254	276 d	α	81.992	(7+)	2.8×10^3 f
		254m	39.3 h	β^- 99.59%, α 0.33%,EC 0.08%	82.070	2+	1.8×10^3 fs
		255	38.3 d	β^- 92.0%,α 8.0%, SF 0.004%	84.12 s	(7/2+)	65 rs
		256	7.6 h	β^-	87.26 s	(7,8)	
		256	22 m	β^-	87.26 s		
100	Fm	242	0.8 ms?	SF		0+	
		244	3.3 ms	SF	68.77 s	0+	
		245	4 s	α	70.02 s		
		246	1.2 s	α 92%,SF 8%	70.131	0+	
		247	9 s	α	71.54 s		
		247	35 s	α ≥50%,EC ≤50%	71.54 s		
		248	36 s	α 99.9%,SF 0.1%	71.891	0+	
		249	3 m	α	73.50 s		
		250	30 m	α,EC?	74.069	0+	
		250m	1.8 s	IT			
		251	5.3 h	EC 98.2%,α 1.8%	76.00 s	(9/2−)	
		252	25.4 h	α	76.822	0+	
		253	3.0 d	EC 88%,α 12%	79.346	1/2+	
		254	3.240 h	α 99+%,SF 0.0590%	80.899	0+	
		255	20.1 h	α	83.793	7/2+	3.3×10^3 sc f

TABLE OF NUCLIDES

Z	Nuclide El	A	Abundance or $t_{1/2}$	Decay Mode	Δ(MeV)	Jπ	σ_n(b)
100	Fm	256	2.63 h	SF 91.9%,α 8.1%	85.481	0+	
		257	100.5 d	α 99.79%,SF 0.21%	88.588	(9/2+)	6×10^3 sc 3.0×10^3 fs
		258	0.4 ms	SF		0+	
		259	1.5 s	SF			
101	Md	248	7 s	EC+β^+ 80%,α 20%	77.00 s		
		249	24 s	EC+β^+ ≤80%,α ≥20%	77.26 s		
		250	0.9 m	EC+β^+ 94%,α 6%	78.60 s		
		251	4.0 m	EC ≥90%,α ≤10%	79.03 s		
		252	2 m	EC+β^+	80.50 s		
		254	10 m	EC	83.39 s		
		254	28 m	EC	83.39 s		
		255	27 m	EC 92%,α 8%	84.843	(7/2−)	
		256	75 m	EC 90.1%,α 9.9%	87.42 s		
		257	5.0 h	EC 90%,α 10%	89.04 s	(7/2−)	
		258	56 d	α	91.82 s		
		258	43 m	EC(?)	91.82 s		
		259	1.6 h	SF			
102	No	250	0.25 ms?	SF		0+	
		251	0.8 s	α			
		252	2.3 s	α 73%,SF 27%	82.867	0+	
		253	1.7 m	α	84.33 s		
		254	55 s	α	84.729	0+	
		254m	0.28 s	IT			
		255	3.1 m	α 62%,EC 38%	86.87 s	(1/2+)	
		256	3.2 s	α ≈99.7%,SF ≈0.3%	87.801	0+	
		257	26 s	α	90.223		
		258	1.2 ms	SF	91.52 s	0+	
		259	58 m	α ≈78%,EC ≈22%	94.012		
103	Lr	255	22 s	α	90.25 s		
		256	27 s	α	91.82 s		
		257	0.65 s	α	92.97 s		
		258	4.3 s	α	94.82 s		
		259	5 s	α	95.97 s		
		260	3.0 m	α	98.14 s		
104		253	1.8 s?	SF ≈50%(?)			
		254	0.5 ms?	SF		0+	
		255	2 s?	SF ≈50%			
		256	≈5 ms?	SF		0+	
		257	5 s	α	95.95 s		
		258	11 ms?	SF	96.55 s	0+	
		259	3 s	α	98.50 s		
		260	0.08 s?	SF	99.23 s	0+	
		261	1.1 m	α	101.25 s		
105		255	≈1.2 s?	SF ≈20%			
		257	5 s?	SF ≈20%			
		260	1.5 s	α 90%,SF 10%	103.65 s		
		261	2 s	α ≈75%,SF ≈25%	104.46 s		
		262	0.7 m	α ≈40%, SF or EC(?) ≈60%	106.04 s		
106		259	4 to 10 ms?	SF ≈70%(?)			
		263	0.9 s	α			
107		261	1 to 2 ms?	SF ≈20%			