

Table 3 Relative atomic masses and half-lives of selected radionuclides.

[Prepared, as in previous years, by N. E. Holden, a former Commission member; a = year; d = day; h = hour; min = minute; s = second. Names of elements with atomic number 112 to 118 are provisional.]

Atomic number	Element name	Symbol	Mass number	Atomic mass	Half-life	Unit
43	technetium	Tc	97	96.9064	$4.2(2) \times 10^6$	a
			98	97.9072	$6.6(1.0) \times 10^6$	a
			99	98.9063	$2.1(3) \times 10^5$	a
61	promethium	Pm	145	144.9127	17.7(4)	a
			147	146.9151	2.623(3)	a
84	polonium	Po	209	208.9824	102(5)	a
			210	209.9829	138.4(1)	d
85	astatine	At	210	209.9871	8.1(4)	h
			211	210.9875	7.21(1)	h
86	radon	Rn	211	210.9906	14.6(2)	h
			220	220.0114	55.6(1)	s
			222	222.0176	3.823(4)	d
87	francium	Fr	223	223.0197	22.0(1)	min
88	radium	Ra	223	223.0185	11.43(1)	d
			224	224.0202	3.66(2)	d
			226	226.0254	1599(4)	a
			228	228.0311	5.76(3)	a
89	actinium	Ac	227	227.0278	21.77(2)	a
90	thorium	Th	230	230.0331	$7.54(3) \times 10^6$	a
			232	232.0381	$1.40(1) \times 10^{10}$	a
91	protactinium	Pa	231	231.0359	$3.25(1) \times 10^4$	a
92	uranium	U	233	233.0396	$1.592(2) \times 10^5$	a
			234	234.0410	$2.455(6) \times 10^5$	a
			235	235.0439	$7.04(1) \times 10^8$	a
			236	236.0456	$2.342(4) \times 10^7$	a
			238	238.0508	$4.468(3) \times 10^9$	a

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Atomic number	Element name	Symbol	Mass number	Atomic mass	Half-life	Unit
93	neptunium	Np	237	237.0482	$2.14(1) \times 10^6$	a
			239	239.0529	2.355(6)	d
94	plutonium	Pu	238	238.0496	87.7(1)	a
			239	239.0522	$2.410(3) \times 10^4$	a
			240	240.0538	$6.56(1) \times 10^3$	a
			241	241.0569	14.4(1)	a
			242	242.0587	$3.75(2) \times 10^5$	a
			244	244.0642	$8.00(9) \times 10^7$	a
95	americium	Am	241	241.0568	432.7(6)	a
			243	243.0614	$7.37(2) \times 10^3$	a
96	curium	Cm	243	243.0614	29.1(1)	a
			244	244.0628	18.1(1)	a
			245	245.0655	$8.48(6) \times 10^3$	a
			246	246.0672	$4.76(4) \times 10^3$	a
			247	247.0704	$1.56(5) \times 10^7$	a
			248	248.0723	$3.48(6) \times 10^5$	a
97	berkelium	Bk	247	247.0703	$1.4(3) \times 10^3$	a
			249	249.0750	$3.20(3) \times 10^2$	d
98	californium	Cf	249	249.0749	351(2)	a
			250	250.0764	13.1(1)	a
			251	251.0796	$9.0(5) \times 10^2$	a
			252	252.0816	2.65(1)	a
99	einsteinium	Es	252	252.0830	472(2)	d
100	fermium	Fm	257	257.0951	100.5(2)	d
101	mendelevium	Md	258	258.0984	51.5(3)	d
			260	260.1037	27.8(3)	d
102	nobelium	No	259	259.1010	58(5)	min
103	lawrencium	Lr	262	262.1096	3.6(3)	h
104	rutherfordium	Rf	267	267.1215	1.3 ^a	min
105	dubnium	Db	268	268.1255	-0.7 ^a	d
106	seaborgium	Sg	271	271.1335	-21 ^a	s
107	bohrium	Bh	272	272.1380	-10 ^a	s
108	hassium	Hs	277	277.150	16.5 ^{a,b}	min
109	meitnerium	Mt	276	276.1512	0.7 ^{a,b}	s
110	darmstadtium	Ds	281	281.162	-9.6 ^{a,b}	s
111	roentgenium	Rg	280	280.1645	-3.6 ^{a,b}	s
112	ununbium	Uub	285	285.174	-34 ^{a,b}	s
113	ununtrium	Uut	284	284.178	-0.5 ^{a,b}	s
114	ununquadium	Uuq	289	289.189	-2.7 ^{a,b}	s
115	ununpentium	Uup	288	288.192	$-87^{a,b} \times 10^{-3}$	s
116	ununhexium	Uuh	293		-0.05 ^{a,b}	s
118	ununoctium	Uuo	294		$-1.8^{a,b} \times 10^{-3}$	s

^aThe uncertainties of these elements are asymmetric.

^bThe value given is determined only from a few decays.