Standard Atomic Weights of the Elements (1986)

See reverse for explanation.

Key

Chemical symbol → Cd 48 ← Atomic number

112.41 ← Atomic weight

	I A	II A											III B	IV B	V B	VI B	VII B	Inert Gases
															Pnictide Elements	Chalcogens	Halogens	
1	H 1																	He 2
	1.00794																	4.002602
2	Li 3	Be 4											B 5	C 6	N 7	O 8	F 9	Ne 10
	6.941	9.01218											10.811	12.011	14.0067	15.9994	18.998403	20.179
3	Na 11	Mg 12											Al 13	Si 14	P 15	S 16	Cl 17	Ar 18
	22.98977	24.305											26.98154	28.0855	30.97376	32.066	35.453	39.948
			Transition Metals															
			III A	IV A	V A	VI A	VII A	VIII A	IX A	X A	I B	II B						
4	K 19	Ca 20	Sc 21	Ti 22	V 23	Cr 24	Mn 25	Fe 26	Co 27	Ni 28	Cu 29	Zn 30	Ga 31	Ge 32	As 33	Se 34	Br 35	Kr 36
	39.0983	40.078	44.95591	47.88	50.9415	51.9961	54.9380	55.847	58.9332	58.69	63.546	65.39	69.723	72.59	74.9216	78.96	79.904	83.80
5	Rb 37	Sr 38	Y 39	Zr 40	Nb 41	Mo 42	Tc 43	Ru 44	Rh 45	Pd 46	Ag 47	Cd 48	In 49	Sn 50	Sb 51	Te 52	I 53	Xe 54
	85.4678	87.62	88.9059	91.224	92.9064	95.94	(98)	101.07	102.9055	106.42	107.8682	112.41	114.82	118.710	121.75	127.60	126.9045	131.29
6	Cs 55	Ba 56	La-Lu	Hf 72	Ta 73	W 74	Re 75	Os 76	Ir 77	Pt 78	Au 79	Hg 80	Tl 81	Pb 82	Bi 83	Po 84	At 85	Rn 86
	132.9054	137.33		178.49	180.9479	183.85	186.207	190.2	192.22	195.08	196.9665	200.59	204.383	207.2	208.9804	(209)	(210)	(222)
7	Fr 87	Ra 88	Ac-Lr															
	(223)	226.0254																

Lanthanide Metals

La 57	Ce 58	Pr 59	Nd 60	Pm 61	Sm 62	Eu 63	Gd 64	Tb 65	Dy 66	Ho 67	Er 68	Tm 69	Yb 70	Lu 71
138.9055	140.12	140.9077	144.24	(145)	150.36	151.96	157.25	158.9254	162.50	164.9304	167.26	168.9342	173.04	174.967

Actinide Metals

Ac 89	Th 90	Pa 91	U 92	Np 93	Pu 94	Am 95	Cm 96	Bk 97	Cf 98	Es 99	Fm 100	Md 101	No 102	Lr 103
227.0278	232.0381	231.0359	238.0289	237.0482	(244)	(243)	(247)	(247)	(251)	(252)	(257)	(258)	(259)	(260)

Alkali Metals

Alkaline Earth Metals

Standard Atomic Weights of the Elements (1986)

The atomic weights listed on the reverse of this tear-out page are in atomic mass units (amu) relative to $^{12}C = 12$. The atomic weights of many elements are not invariant but depend on the origin and treatment of the material. The footnotes given below elaborate the types of variation to be expected for individual elements. The values given apply to elements as they exist naturally on earth and to certain artificial elements. When used with due regard to the footnotes they are considered reliable to ±1 in the last digit unless another error limit is mentioned under "Comments." Values in parentheses are used for radioactive elements whose atomic weights cannot be quoted precisely without knowledge of the origin of the elements; the value given is the atomic mass number of the isotope of that element of longest known half-life.

Footnotes to Table

Source: International Union of Pure and Applied Chemistry.

(a) Value of atomic weight changed from that in 1978 list. (b) Element for which known variations in isotopic composition in normal terrestrial material prevent a more precise atomic weight being given; values listed here should be applicable to any "normal" material. (c) Element for which geological specimens are known in which the element has an anomalous isotopic composition, such that the difference between the atomic weight of the element in such specimens and that listed here may exceed considerably the implied uncertainty. (d) Element for which substantial variations in atomic weight from the value listed here can occur in commercially available material because of inadvertent or undisclosed change of isotopic composition. (e) Element for which the value of atomic weight listed here is that of the radioisotope of longest half-life.

Symbol	Atomic number	Atomic weight	Comments
Ac	89	227.0278	(e)
Ag	47	107.8682	(c), ±3
Al	13	26.98154	
Am	95	(243)	
Ar	18	39.948	(a, b, c)
As	33	74.9216	
At	85	(210)	
Au	79	196.9665	
B	5	10.811	(b, d), ±5
Ba	56	137.33	(c)
Be	4	9.01218	
Bi	83	208.9804	
Bk	97	(247)	
Br	35	79.904	
C	6	12.011	(b)
Ca	20	40.078	(c), ±4
Cd	48	112.41	(c)
Ce	58	140.12	(c)
Cf	98	(251)	
Cl	17	35.453	
Cm	96	(247)	
Co	27	58.9332	
Cr	24	51.9961	±6
Cs	55	132.9054	
Cu	29	63.546	(b), ±3
Dy	66	162.5	±3
Er	68	167.26	±3
Es	99	(252)	
Eu	63	151.96	(c)
F	9	18.998403	
Fe	26	55.847	±3
Fm	100	(257)	
Fr	87	(223)	
Ga	31	69.723	±4
Gd	64	157.25	(c), ±3
Ge	32	72.59	±3
H	1	1.00794	±7
He	2	4.002602	(c), ±2
Hf	72	178.49	±3
Hg	80	200.59	±3
Ho	67	164.9304	
I	53	126.9045	
In	49	114.82	(c)
Ir	77	192.22	±3
K	19	39.0983	(a)
Kr	36	83.8	(c, d)
La	57	138.9055	(c), ±3
Li	3	6.941	(b, c, d), ±2
Lr	103	(260)	
Lu	71	174.967	
Md	101	(258)	
Mg	12	24.305	(c)
Mn	25	54.9380	
Mo	42	95.94	
N	7	14.0067	
Na	11	22.98977	
Nb	41	92.9064	
Nd	60	144.24	(c), ±3
Ne	10	20.179	(a, d)
Ni	28	58.69	(a)
No	102	(259)	
Np	93	237.0482	(e)
O	8	15.9994	(b, c), ±3
Os	76	190.2	(c)
P	15	30.97376	(a, c)
Pa	91	231.0359	(e)
Pb	82	207.2	(b, c)
Pd	46	106.42	(a, c)
Pm	61	(145)	
Po	84	(209)	
Pr	59	140.9077	
Pt	78	195.08	(a), ±3
Pu	94	(244)	
Ra	88	226.0254	(c, e)
Rb	37	85.4678	(c), ±3
Re	75	186.207	
Rh	45	102.9055	
Rn	86	(222)	
Ru	44	101.07	(c), ±2
S	16	32.066	(b), ±6
Sb	51	121.75	±3
Sc	21	44.95591	±1
Se	34	78.96	±3
Si	14	28.0855	±3
Sm	62	150.36	(a, c), ±3
Sn	50	118.710	±7
Sr	38	87.62	(c)
Ta	73	180.9479	(a)
Tb	65	158.9254	
Tc	43	(98)	
Te	52	127.60	(c), ±3
Th	90	232.0381	(c, e)
Ti	22	47.88	(a), ±3
Tm	69	168.9342	
U	92	238.0289	(a, c, d)
(Unh)	106	(263)	
(Unp)	105	(262)	
(Unq)	104	(261)	
V	23	50.9415	
W	74	183.85	(a), ±3
Xe	54	131.29	(a, c, d), ±3
Y	39	88.9059	
Yb	70	173.04	±3
Zn	30	65.39	±2
Zr	40	91.224	±2