

Periodic Table of the Elements

1 1 1.0080 ±1 H hydrogen 2 3 6.97 1 Li lithium 4 9.012182 2 Be beryllium	11 22.989769 1 Na sodium 12 24.3050 2 Mg magnesium	19 39.0983 1 K potassium 20 40.078 2 Ca calcium	21 44.955912 3 Sc scandium 22 47.867 2,3,(4) Ti titanium	23 50.9415 2,3,4,(5) V vanadium 24 51.9961 2,(3),6 Cr chromium	25 54.938045 (2),3,4,6,7 Mn manganese 26 55.845 2,(3) Fe iron	27 58.933195 (2),3 Co cobalt 28 58.6934 (2),3 Ni nickel	29 63.546 1,(2) Cu copper 30 65.38 2 Zn zinc	31 69.723 3 Ga gallium 32 72.63 2,(4) Ge germanium	33 74.92160 (±3),5 As arsenic 34 78.96 -2,(4),6 Se selenium	35 79.904 (±1),5 Br bromine 36 83.798 0 Kr krypton	37 85.4678 1 Rb rubidium 38 87.62 2 Sr strontium	39 88.90585 3 Y yttrium 40 91.224 4 Zr zirconium	41 92.906 3,(5) Nb niobium 42 95.96 2,3,4,5,(6) Mo molybdenum	43 [97.9072] 4,6,(7) Tc technetium 44 101.07 2,(3),4,(6),8 Ru ruthenium	45 102.90550 2,(3),4 Rh rhodium 46 106.42 (2),4 Pd palladium	47 107.8682 1 Ag silver 48 112.411 2 Cd cadmium	49 114.818 3 In indium 50 118.710 2,(4) Sn tin	51 121.760 (±3),5 Sb antimony 52 127.60 -2,(4),6 Te tellurium	53 126.90447 (±1),5,7 I iodine 54 131.293 0 Xe xenon	55 132.905452 1 Cs cesium 56 137.327 2 Ba barium	71 174.9668 3 Lu lutetium 72 178.49 4 Hf hafnium	73 180.94788 5 Ta tantalum 74 183.84 2,3,4,5,(6) W tungsten	75 186.207 -1,2,4,6,(7) Re rhenium 76 190.23 2,3,(4),6,8 Os osmium	77 192.217 2,3,(4),6 Ir iridium 78 195.084 2,(4) Pt platinum	79 196.966569 1,(3) Au gold 80 200.59 1,(2) Hg mercury	81 204.384 (1),3 Tl thallium 82 207.2 (2),4 Pb lead	83 208.98040 (3),5 Bi bismuth 84 [208.9824] 2,(4) Po polonium	85 [209.9871] (±1),3,5,7 At astatine 86 [222.0176] 0 Rn radon	87 [223.0197] 1 Fr francium 88 [226.0254] 2 Ra radium	103 [261.1096] 3 Lr lawrencium 104 [265.1167] 4 Rf rutherfordium	105 [268.1250] — Db dubnium 106 [271.133] — Sg seaborgium
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★	57	138.90547	3	58	140.116	(3),4	59	140.90765	(3),(4)	60	144.242	3	61	[144.9127]	3	62	150.36	2,(3)	63	151.964	2,(3)	64	157.25	3	65	158.925	(3),4	66	162.500	3	67	164.93032	3	68	167.259	3	69	168.93421	2,(3)	70	173.054	2,(3)
	3737			3706			3793			3347			3300 (est.)			2067			1800			3546			3503			2840			2973			3141			2223			1469		
	1191			1071±3			1204			1294			1315			1347			1095			1586			1629			1685			1747			1802			1818			1092		
	6.7			6.78			6.77			7.00			6.475			7.54			5.259			7.895			8.27			8.536			8.80			9.05			9.33			6.98		
	[Xe]6s ² 5d ¹			[Xe]6s ² 4f ¹ 5d ¹			[Xe]6s ² 4f ³			[Xe]6s ² 4f ⁴			[Xe]6s ² 4f ⁶			[Xe]6s ² 4f ⁶			[Xe]6s ² 4f ⁷			[Xe]6s ² 4f ⁷ 5d ¹			[Xe]6s ² 4f ⁹			[Xe]6s ² 4f ¹⁰			[Xe]6s ² 4f ¹¹			[Xe]6s ² 4f ¹²			[Xe]6s ² 4f ¹³			[Xe]6s ² 4f ¹⁴		
	lanthanum			cerium			praseodymium			neodymium			promethium			samarium			europium			gadolinium			terbium			dysprosium			holmium			erbium			thulium			ytterbium		
★★	89	[227.0278]	3	90	232.0381	4	91	[231.0359]	4,(5)	92	238.02891	3,4,5,(6)	93	[237.0482]	3,4,(5),6	94	[244.0642]	3,(4),5,6	95	[243.0614]	(3),4,5,6	96	[247.0704]	(3),4	97	[247.0703]	(3),4	98	[251.0796]	(3),4	99	[252.0830]	(2),3	100	[257.0951]	3	101	[258.0984]	2,3	102	[259.1010]	2,3
	3500±300			4273			—			4091			4175			3505			2880			—			—			—			—			—			—			—		
	1323			2023			1873			1405			913			914			1267			1613			—			—			—			—			—			—		
	10.07			11.70			15.40			18.90			20.45			19.80			13.6			13.5			—			—			—			—			—			—		
	[Rn]7s ² 6d ¹			[Rn]7s ² 6d ²			[Rn]7s ² 5f ² 6d ¹			[Rn]7s ² 5f ³ 6d ¹			[Rn]7s ² 5f ⁶ 6d ¹			[Rn]7s ² 5f ⁶			[Rn]7s ² 5f ⁷			[Rn]7s ² 5f ⁷ 6d ¹			[Rn]7s ² 5f ⁹			[Rn]7s ² 5f ¹⁰			[Rn]7s ² 5f ¹¹			[Rn]7s ² 5f ¹²			[Rn]7s ² 5f ¹³			[Rn]7s ² 5f ¹⁴		
	actinium			thorium			protactinium			uranium			neptunium			plutonium			americium			curium			berkelium			californium			einsteinium			fermium			mendelevium			nobelium		

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Data from www.iupac.org. For several elements, the variability in atomic mass depends substantially on whether the sample origin is organic or inorganic. For these elements, the average, with decreased precision, is reported.

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Last revised 06.2016

★	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb
	195414 122 (+3)6.2 —26.39 45.3513.5 5.57701.26 11.0591.10	185414 107 (+3)5.46 —26.62 —11.4 5.53871.15 10.8821.12	185296.8 106 (+3)6.89 —26.77 —12.5 5.46201.48 10.5721.13	185273 104 (+3)7.14 —27.41 —16.5 5.52521.57 10.7791.14	185— 109 (+3)— —26.08 —17.9 5.5967— 10.8821.13	185166.4 108 (+3)8.63 —30.07 —13.3 5.64330.96 11.0901.17	185143.5 89 (+3)9.21 —27.35 —13.9 5.67031.12 11.2451.20	180359.4 97 (+3)10.05 —36.17 —10.6 6.15020.74 12.1261.20	175330.9 97 (+3)10.8 81 (+4)28.61 —11.1 5.86410.89 11.5041.20	175230 91 (+3)11.06 —27.63 —10.7 5.93871.08 11.7121.22	175241 89 (+3)12.2 —26.39 —16.2 6.02161.24 11.8151.23	175261 89 (+3)19.9 —28.43 —14.3 6.10771.17 11.9191.24	175191 94 (+3)16.84 87 (+4)27.03 —16.8 6.18441.50 12.0231.25	175128.9 113 (+2)7.66 86 (+3)25.96 —1.93 6.25383.51 12.1761.10
	89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No
	195— 162 (+2)— — 33.7712 5.1718 12.1261.10	180514.4 99 (+3)16.1 —27.84 —54 6.08386.53 11.5041.30	180— 113 (+3)12.3 —27.72 —47 5.88695.29 —1.50	175477 103 (+3)8.52 80 (+6)28.56 —27.6 6.19373.80 14.7171.38	175— 110 (+3)5.19 —28.45 —6.3 6.26520.82 —1.36	175344 108 (+3)2.84 81 (+6)31.73 —6.74 6.06000.67 —1.28	175— 107 (+3)14.4 80 (+6)26.74 —10 5.99052.20 —1.3	— 99 (+3)15 — —10 6.0216— —1.3	— 98 (+3)— — —10 6.2289— —1.3	— 98 (+3)— — —10 6.3015— —1.3	— 98 (+3)— — —10 6.4155— —1.3	— 91 (+3)— — —10 6.4984— —1.3	— 90 (+3)— — —10 6.5813— —1.3	— 112 (+2)— — —10 6.6539— —1.3