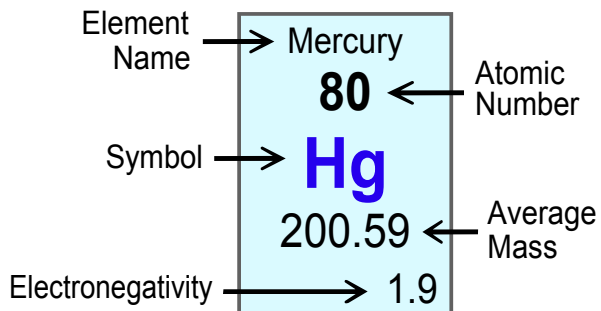


Periodic Table of the Elements

1 Hydrogen H 1.01 2.1	2 Helium He 4.00 ---											13 Boron B 10.81 2.0	14 Carbon C 12.01 2.5	15 Nitrogen N 14.01 3.0	16 Oxygen O 16.00 3.5	17 Fluorine F 19.00 4.0	18 Neon Ne 20.18 ---	
3 Lithium Li 6.94 1.0	4 Beryllium Be 9.01 1.5											13 Aluminum Al 26.98 1.5	14 Silicon Si 28.09 1.8	15 Phosphorus P 30.97 2.1	16 Sulfur S 32.07 2.5	17 Chlorine Cl 35.45 3.0	18 Argon Ar 39.95 --	
11 Sodium Na 22.99 0.9	12 Magnesium Mg 24.31 1.2	3 Scandium Sc 44.96 1.3	4 Titanium Ti 47.88 1.5	5 Vanadium V 50.94 1.6	6 Chromium Cr 52.00 1.6	7 Manganese Mn 54.94 1.5	8 Iron Fe 55.85 1.8	9 Cobalt Co 58.93 1.8	10 Nickel Ni 58.69 1.8	11 Copper Cu 63.55 1.9	12 Zinc Zn 65.39 1.6	13 Gallium Ga 69.72 1.6	14 Germanium Ge 72.61 1.8	15 Arsenic As 74.92 2.0	16 Selenium Se 78.96 2.4	17 Bromine Br 79.90 2.8	18 Krypton Kr 83.80 3.0	
19 Potassium K 39.10 0.8	20 Calcium Ca 40.08 1.0	39 Yttrium Y 88.91 1.2	40 Zirconium Zr 91.22 1.4	41 Niobium Nb 92.91 1.6	42 Molybdenum Mo 95.94 1.8	43 Technetium Tc (98) 1.9	44 Ruthenium Ru 101.07 2.2	45 Rhodium Rh 102.91 2.2	46 Palladium Pd 106.42 2.2	47 Silver Ag 107.87 1.9	48 Cadmium Cd 112.41 1.7	49 Indium In 114.82 1.7	50 Tin Sn 118.71 1.8	51 Antimony Sb 121.76 1.9	52 Tellurium Te 127.60 2.1	53 Iodine I 126.90 2.5	54 Xenon Xe 131.29 2.6	
37 Rubidium Rb 85.47 0.8	38 Strontium Sr 87.62 1.0	57-70 * ---	71 Lutetium Lu 174.97 1.1	72 Hafnium Hf 178.49 1.3	73 Tantalum Ta 180.95 1.5	74 Tungsten W 183.84 1.7	75 Rhenium Re 186.21 1.9	76 Osmium Os 190.23 2.2	77 Iridium Ir 192.22 2.2	78 Platinum Pt 195.08 2.2	79 Gold Au 196.97 2.4	80 Mercury Hg 200.59 1.9	81 Thallium Tl 204.38 1.8	82 Lead Pb 207.20 1.8	83 Bismuth Bi 208.98 1.9	84 Polonium Po (209) 2.0	85 Astatine At (210) 2.2	86 Radon Rn (222) 2.4
55 Cesium Cs 132.91 0.7	56 Barium Ba 137.33 0.9	89-102 ** ---	103 Lawrencium Lr (262) ---	104 Rutherfordium Rf (261) ---	105 Dubnium Db (262) ---	106 Seaborgium Sg (266) ---	107 Bohrium Bh (264) ---	108 Hassium Hs (269) ---	109 Meitnerium Mt (268) ---	110 Darmstadtium Ds (271) ---	111 Roentgenium Rg (272) ---	112 Copernicium Cn (277) ---	113 Ununtrium Uut (284) ---	114 Flerovium Fl (289) ---	115 Ununpentium Uup (288) ---	116 Livermorium Lv (293) ---	117 Ununseptium Uus (294) ---	118 Ununoctium Uuo (294) ---

Average relative masses are rounded to two decimal places.

All average masses are to be treated as measured quantities, and subject to significant figure rules.



*lanthanides

57 La 138.91 1.1	58 Ce 140.12 1.1	59 Pr 140.91 1.1	60 Nd 144.24 1.1	61 Pm (145) 1.1	62 Sm 150.36 1.2	63 Eu 151.97 1.1	64 Gd 157.25 1.2	65 Tb 158.93 1.1	66 Dy 162.50 1.2	67 Ho 164.93 1.2	68 Er 167.26 1.2	69 Tm 168.93 1.3	70 Yb 173.04 1.1
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**actinides

89 Ac (227) 1.1	90 Th 232.04 1.3	91 Pa 231.04 1.5	92 U 238.03 1.4	93 Np (237) 1.4	94 Pu (244) 1.3	95 Am (243) 1.3	96 Cm (247) 1.3	97 Bk (247) 1.3	98 Cf (251) 1.3	99 Es (252) 1.3	100 Fm (257) 1.3	101 Md (258) 1.3	102 No (259) 1.3
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COMMON ION SHEET

CATIONS		ANIONS	
aluminum	Al ³⁺	acetate	CH ₃ COO ⁻
ammonium	NH ₄ ⁺	benzoate	C ₆ H ₅ COO ⁻
antimony	Sb ³⁺	borate	BO ₃ ³⁻
arsenic (V)	As ⁵⁺	bromate	BrO ₃ ⁻
Arsenic (III)	As ³⁺	bromide	Br ⁻
barium	Ba ²⁺	carbonate	CO ₃ ²⁻
bismuth	Bi ³⁺	hydrogen carbonate, bicarbonate	HCO ₃ ⁻
cadmium	Cd ²⁺	chlorate	ClO ₃ ⁻
calcium	Ca ²⁺	chloride	Cl ⁻
chromium (II), chromous	Cr ²⁺	chlorite	ClO ₂ ⁻
chromium (III), chromic	Cr ³⁺	chromate	CrO ₄ ²⁻
chromium (IV)	Cr ⁴⁺	cyanide	CN ⁻
chromium (VI), chromic	Cr ⁶⁺	dichromate	Cr ₂ O ₇ ²⁻
cobalt (II)	Co ²⁺	dihydrogen phosphate	H ₂ PO ₄ ⁻
cobalt (III)	Co ³⁺	ferricyanide	Fe(CN) ₆ ³⁻
copper (I), cuprous	Cu ⁺	ferrocyanide	Fe(CN) ₆ ⁴⁻
copper (II), cupric	Cu ²⁺	fluoride	F ⁻
hydrogen, hydronium	H ⁺ , H ₃ O ⁺	hydride	H ⁻
iron (II), ferrous	Fe ²⁺	hydrogen phosphate (biphosphate)	HPO ₄ ²⁻
iron (III), ferric	Fe ³⁺	hydrogen sulfate, bisulfate	HSO ₄ ⁻
lead (II)	Pb ²⁺	hydrogen sulfite, bisulfite	HSO ₃ ⁻
lead (IV)	Pb ⁴⁺	hydrogen sulfide, bisulfide	HS ⁻
lithium	Li ⁺	hydroxide	OH ⁻
magnesium	Mg ²⁺	hypochlorite	ClO ⁻
manganese(II), manganous	Mn ²⁺	iodate	IO ₃ ⁻
manganese(III)	Mn ³⁺	iodide	I ⁻
mercury(I), mercurous	Hg ₂ ²⁺	nitrate	NO ₃ ⁻
mercury(II), mercuric	Hg ²⁺	nitride	N ₃ ⁻
nickel(II)	Ni ²⁺	nitrite	NO ₂ ⁻
nickel(III)	Ni ³⁺	oxalate	C ₂ O ₄ ²⁻
potassium	K ⁺	oxide	O ²⁻
scandium	Sc ³⁺	hydrogen oxalate	HC ₂ O ₄ ¹⁻
silver	Ag ⁺	perchlorate	ClO ₄ ⁻
sodium	Na ⁺	permanganate	MnO ₄ ⁻
strontium	Sr ²⁺	phosphate	PO ₄ ³⁻
tin(II), stannous	Sn ²⁺	Phosphide	P ³⁻
tin(IV), stannic	Sn ⁴⁺	phosphite	PO ₃ ³⁻
zinc	Zn ²⁺	monohydrogen phosphate	HPO ₄ ²⁻
		silicate	SiO ₃ ²⁻
		stearate	C ₁₇ H ₃₅ COO ⁻
		sulfate	SO ₄ ²⁻
		sulfide	S ²⁻
		sulfite	SO ₃ ²⁻
		thiocyanate	SCN ⁻