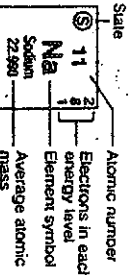


Periodic Table of the Elements

This numbering system is used by the International Union of Pure and Applied Chemistry (IUPAC).



State:
 (S) Solid
 (L) Liquid
 (G) Gas
 (N) Not found in nature

Electrons in each energy level
 Element symbol
 Average atomic mass

1 H Hydrogen 1.0079	2 He Helium 4.0026																																														
3 Li Lithium 6.941	4 Be Beryllium 9.0122																																														
5 B Boron 10.81	6 C Carbon 12.011																																														
7 N Nitrogen 14.007	8 O Oxygen 15.999																																														
9 F Fluorine 18.998	10 Ne Neon 20.179																																														
11 Na Sodium 22.990	12 Mg Magnesium 24.305	13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.06	17 Cl Chlorine 35.453	18 Ar Argon 39.948																																								
19 K Potassium 39.098	20 Ca Calcium 40.08	21 Sc Scandium 44.956	22 Ti Titanium 47.88	23 V Vanadium 50.941	24 Cr Chromium 51.996	25 Mn Manganese 54.938	26 Fe Iron 55.847	27 Co Cobalt 58.933	28 Ni Nickel 58.71	29 Cu Copper 63.546	30 Zn Zinc 65.38	31 Ga Gallium 69.72	32 Ge Germanium 72.63	33 As Arsenic 74.922	34 Se Selenium 78.96	35 Br Bromine 79.904	36 Kr Krypton 83.80																														
37 Rb Rubidium 85.468	38 Sr Strontium 87.62	39 Y Yttrium 88.906	40 Zr Zirconium 91.22	41 Nb Niobium 92.906	42 Mo Molybdenum 95.94	43 Tc Technetium (97)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.91	46 Pd Palladium 106.4	47 Ag Silver 107.87	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.69	51 Sb Antimony 121.75	52 Te Tellurium 127.60	53 I Iodine 126.905	54 Xe Xenon 131.30																														
55 Cs Cesium 132.91	56 Ba Barium 137.33	57 La Lanthanum 138.91	58 Ce Cerium 140.12	59 Pr Praseodymium 140.91	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.4	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.93	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.97	72 Hf Hafnium 178.49	73 Ta Tantalum 180.95	74 W Tungsten 183.85	75 Re Rhenium 186.21	76 Os Osmium 190.2	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.97	80 Hg Mercury 200.59	81 Tl Thallium 204.37	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)																
87 Fr Francium (223)	88 Ra Radium (226)	103 Lr Lawrencium (260)	104 ^a	105 ^a	106 ^a	107 ^a																																									
		*Name not officially assigned																																													



Table 7-2 Activity Series of Metals

Name	Symbol
Lithium	Li
Potassium	K
Barium	Ba
Calcium	Ca
Sodium	Na
Magnesium	Mg
Aluminum	Al
Zinc	Zn
Iron	Fe
Nickel	Ni
Tin	Sn
Lead	Pb
(Hydrogen)	(H)*
Copper	Cu
Mercury	Hg
Silver	Ag
Gold	Au

↑ Decreasing activity

*Metals from Li to Na will replace H from acids and water; from Mg to Pb they will replace H from acids only.

Table 5-4 Common Polyatomic Ions

Formula	Name	Formula	Name	Formula	Name
$H_2PO_4^-$	Dihydrogen phosphate	HPO_4^{2-}	Hydrogen phosphate	PO_4^{3-}	Phosphate
$C_2H_3O_2^-$	Acetate	$C_2O_4^{2-}$	Oxalate	PO_3^{3-}	Phosphite
HSO_3^-	Hydrogen sulfite (bisulfite)	SO_3^{2-}	Sulfite		
HSO_4^-	Hydrogen sulfate (bisulfate)	SO_4^{2-}	Sulfate		
HCO_3^-	Hydrogen carbonate (bicarbonate)	CO_3^{2-}	Carbonate	NH_4^+	Ammonium
NO_2^-	Nitrite				
NO_3^-	Nitrate	CrO_4^{2-}	Chromate		
CN^-	Cyanide				
OH^-	Hydroxide	$Cr_2O_7^{2-}$	Dichromate		
MnO_4^-	Permanganate	SiO_3^{2-}	Silicate		
ClO_4^-	Perchlorate				
ClO_3^-	Chlorate				
ClO_2^-	Chlorite				
ClO^-	Hypochlorite				