

# Periodic Table of the Elements

1 H Hydrogen 1.008	2 He Helium 4.003																	18 Ar Argon 39.948
3 Li Lithium 6.941	4 Be Beryllium 9.012																	19 K Potassium 39.098
5 B Boron 10.811	6 C Carbon 12.011																	20 Ca Calcium 40.078
7 N Nitrogen 14.007	8 O Oxygen 15.999																	21 Sc Scandium 44.956
9 F Fluorine 18.998	10 Ne Neon 20.180																	22 Ti Titanium 47.867
11 Na Sodium 22.990	12 Mg Magnesium 24.305																	23 V Vanadium 50.942
13 Al Aluminum 26.982	14 Si Silicon 28.086																	24 Cr Chromium 51.996
15 P Phosphorus 30.974	16 S Sulfur 32.066																	25 Mn Manganese 54.938
17 Cl Chlorine 35.453	18 Ar Argon 39.948																	26 Fe Iron 55.845
19 K Potassium 39.098	20 Ca Calcium 40.078																	27 Co Cobalt 58.933
21 Sc Scandium 44.956	22 Ti Titanium 47.867																	28 Ni Nickel 58.693
23 V Vanadium 50.942	24 Cr Chromium 51.996																	29 Cu Copper 63.546
25 Mn Manganese 54.938	26 Fe Iron 55.845																	30 Zn Zinc 65.38
27 Co Cobalt 58.933	28 Ni Nickel 58.693																	31 Ga Gallium 69.723
29 Cu Copper 63.546	30 Zn Zinc 65.38																	32 Ge Germanium 72.631
31 Ga Gallium 69.723	32 Ge Germanium 72.631																	33 As Arsenic 74.922
33 As Arsenic 74.922	34 Se Selenium 78.971																	34 Se Selenium 78.971
35 Br Bromine 79.904	36 Kr Krypton 83.798																	35 Br Bromine 79.904
37 Rb Rubidium 85.468	38 Sr Strontium 87.62																	36 Kr Krypton 83.798
39 Y Yttrium 88.906	40 Zr Zirconium 91.224																	37 Rb Rubidium 85.468
41 Nb Niobium 92.906	42 Mo Molybdenum 95.95																	38 Sr Strontium 87.62
43 Tc Technetium 98.907	44 Ru Ruthenium 101.07																	39 Y Yttrium 88.906
45 Rh Rhodium 102.906	46 Pd Palladium 106.42																	40 Zr Zirconium 91.224
47 Ag Silver 107.868	48 Cd Cadmium 112.414																	41 Nb Niobium 92.906
49 In Indium 114.818	50 Sn Tin 118.710																	42 Mo Molybdenum 95.95
51 Sb Antimony 121.760	52 Te Tellurium 127.6																	43 Tc Technetium 98.907
53 I Iodine 126.904	54 Xe Xenon 131.294																	44 Ru Ruthenium 101.07
55 Cs Cesium 132.905	56 Ba Barium 137.328																	45 Rh Rhodium 102.906
57 La Lanthanum 138.905	58 Ce Cerium 140.116																	46 Pd Palladium 106.42
59 Pr Praseodymium 140.908	60 Nd Neodymium 144.242																	47 Ag Silver 107.868
61 Pm Promethium 144.913	62 Sm Samarium 150.36																	48 Cd Cadmium 112.414
63 Eu Europium 151.964	64 Gd Gadolinium 157.25																	49 In Indium 114.818
65 Tb Terbium 158.925	66 Dy Dysprosium 162.500																	50 Sn Tin 118.710
67 Ho Holmium 164.930	68 Er Erbium 167.259																	51 Sb Antimony 121.760
69 Tm Thulium 168.934	70 Yb Ytterbium 173.055																	52 Te Tellurium 127.6
71 Lu Lutetium 174.967	72 Hf Hafnium 178.49																	53 I Iodine 126.904
73 Ta Tantalum 180.948	74 W Tungsten 183.84																	54 Xe Xenon 131.294
75 Re Rhenium 186.207	76 Os Osmium 190.23																	55 Cs Cesium 132.905
77 Ir Iridium 192.227	78 Pt Platinum 195.085																	56 Ba Barium 137.328
79 Au Gold 196.967	80 Hg Mercury 200.592																	57 La Lanthanum 138.905
81 Tl Thallium 204.383	82 Pb Lead 207.2																	58 Ce Cerium 140.116
83 Bi Bismuth 208.980	84 Po Polonium [209]																	59 Pr Praseodymium 140.908
85 At Astatine 209.987	86 Rn Radon 222.018																	60 Nd Neodymium 144.242
87 Fr Francium 223.020	88 Ra Radium 226.025																	61 Pm Promethium 144.913
89 Ac Actinium 227.028	90 Th Thorium 232.038																	62 Sm Samarium 150.36
91 Pa Protactinium 231.036	92 U Uranium 238.029																	63 Eu Europium 151.964
93 Np Neptunium 237.048	94 Pu Plutonium 244.064																	64 Gd Gadolinium 157.25
95 Am Americium 243.061	96 Cm Curium 247.070																	65 Tb Terbium 158.925
97 Bk Berkelium 247.070	98 Cf Californium 251.080																	66 Dy Dysprosium 162.500
99 Es Einsteinium [254]	100 Fm Fermium 257.095																	67 Ho Holmium 164.930
101 Md Mendelevium 258.1	102 No Nobelium 259.101																	68 Er Erbium 167.259
103 Lr Lawrencium [262]																		69 Tm Thulium 168.934

© 2019 IUPAC, IUPAC Periodic Table of the Elements

Common Polyatomic Ions						
Charge	Ion	Name	Charge	Ion	Name	
+1	$NH_4^+$	ammonium	-1	$NO_2^-$	nitrite	
	$H_3O^+$	hydronium		$NO_3^-$	nitrate	
-1	$C_2H_3O_2^-$ or $CH_3COO^-$	acetate		$CHO_2^-$ or $COOH$	formate	
	$HCO_3^-$	hydrogen carbonate or bicarbonate		$HSO_4^-$	hydrogen sulfate or bisulfate	
	$BrO^-$	hypobromite		$MnO_4^-$	permanganate	
	$BrO_2^-$	bromite		$CN^-$	cyanide	
	$BrO_3^-$	bromate		$SCN^-$	thiocyanide	
	$BrO_4^-$	perbromate		-2	$CO_3^{2-}$	carbonate
	$H_2PO_4^-$	dihydrogen phosphate			$CrO_4^{2-}$	chromate
	$ClO^-$	hypochlorite			$Cr_2O_7^{2-}$	dichromate
	$ClO_2^-$	chlorite			$HPO_4^{2-}$	hydrogen phosphate
	$ClO_3^-$	chlorate			$C_2O_4^{2-}$	oxalate
	$ClO_4^-$	perchlorate	$O_2^{2-}$		peroxide	
	$OH^-$	hydroxide	$SO_3^{2-}$		sulfite	
	$IO^-$	hypoiodite	$SO_4^{2-}$		sulfate	
	$IO_3^-$	iodite	-3	$S_2O_3^{2-}$	thiosulfate	
	$IO_3^-$	iodate		$PO_4^{3-}$	phosphate	
	$IO_4^-$	periodate		$AsO_4^{3-}$	arsenate	

Common Ions from Transition Metals and Group 3A and 4A	
Group	Common Ions
3B	$Sc^{3+}, Y^{3+}, La^{3+}$
4B	$Ti^{2+}, Ti^{3+}$
5B	$V^{2+}, V^{3+}$
6B	$Cr^{2+}, Cr^{3+}$
7B	$Mn^{2+}, Mn^{3+}, Mn^{4+}, Tc^{2+}$
8B	$Fe^{2+}$ (ferrous), $Fe^{3+}$ (ferric)
8B	$Co^{2+}, Co^{3+}$
8B	$Ni^{2+}, Ni^{3+}, Pd^{2+}, Pt^{2+}, Pt^{4+}$
1B	$Cu^+$ (cuprous), $Cu^{2+}$ (cupric), $Ag^+$ , $Au^+$ , $Au^{3+}$
2B	$Zn^{2+}, Cd^{2+}, Hg_2^{2+}, Hg^{2+}$
3A	$Al^{3+}, Ga^{2+}, Ga^{3+}, In^+, In^{2+}, In^{3+}, Tl^+, Tl^{3+}$
4A	$Sn^{2+}$ (stannous), $Sn^{4+}$ (stannic), $Pb^{2+}, Pb^{4+}$