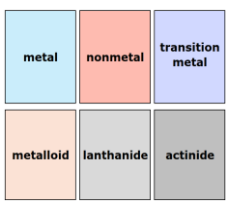
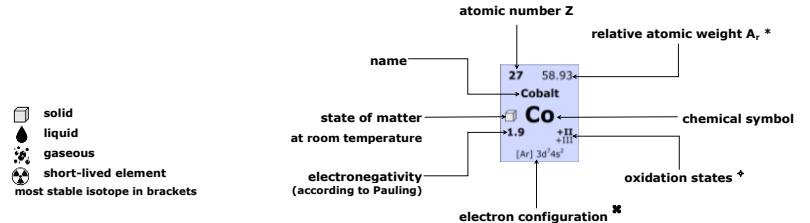


	GROUP 1 IA ALKALI METALS	GROUP 2 IIA ALKALINE EARTH METALS	GROUP 3 IIIB	GROUP 4 IVB	GROUP 5 VB	GROUP 6 VIB	GROUP 7 VIIB	GROUP 8 VIII TRIADS	GROUP 9 VIII TRIADS	GROUP 10 VIII TRIADS	GROUP 11 IB	GROUP 12 IIB	GROUP 13 IIIA EARTH METALS	GROUP 14 IVA CARBON GROUP	GROUP 15 VA NITROGEN GROUP	GROUP 16 VIA OXYGEN GROUP	GROUP 17 VIIA HALOGENS	GROUP 18 0 NOBLE GASES						
PERIOD 1	1 1.008 Hydrogen H 2.2 +I -1 1s ¹																	2 4.003 Helium He -- 0 1s ²						
PERIOD 2	3 6.94 Lithium Li 1.0 +I 1s ² 2s ¹	4 9.012 Beryllium Be 1.6 +II 1s ² 2s ²																	5 10.81 Boron B 2.0 +III 1s ² 2s ² 2p ¹	6 12.01 Carbon C 2.6 +I +II +III +IV 1s ² 2s ² 2p ²	7 14.01 Nitrogen N 3.0 -III +V ±I ±II ±III ±IV 1s ² 2s ² 2p ³	8 16.00 Oxygen O 3.4 -II -I +II 1s ² 2s ² 2p ⁴	9 19.00 Fluorine F 4.0 -I 1s ² 2s ² 2p ⁵	10 20.18 Neon Ne -- 0 1s ² 2s ² 2p ⁶
PERIOD 3	11 22.99 Sodium Na 0.9 +I [Ne] 3s ¹	12 24.31 Magnesium Mg 1.2 +II [Ne] 3s ²																	13 26.98 Aluminum Al 1.5 +III [Ne] 3s ² 3p ¹	14 28.09 Silicon Si 1.8 +II -IV +IV [Ne] 3s ² 3p ²	15 30.97 Phosphorus P 2.1 -III +V +III [Ne] 3s ² 3p ³	16 32.06 Sulfur S 2.5 +IV -II +VI [Ne] 3s ² 3p ⁴	17 35.45 Chlorine Cl 3.0 -I +VII +I +III +V [Ne] 3s ² 3p ⁵	18 39.95 Argon Ar -- 0 [Ne] 3s ² 3p ⁶
PERIOD 4	19 39.10 Potassium K 0.8 +I [Ar] 4s ¹	20 40.08 Calcium Ca 1.0 +II [Ar] 4s ²	21 44.96 Scandium Sc 1.4 +III [Ar] 3d ¹ 4s ²	22 47.87 Titanium Ti 1.5 +II +III +II +IV [Ar] 3d ² 4s ²	23 50.94 Vanadium V 1.6 +II +V +III +IV [Ar] 3d ³ 4s ²	24 52.00 Chromium Cr 1.7 +III +VI +II [Ar] 3d ⁵ 4s ¹	25 54.94 Manganese Mn 1.6 +II +VII +III +IV +V [Ar] 3d ⁵ 4s ²	26 55.85 Iron Fe 1.8 +II +III [Ar] 3d ⁶ 4s ²	27 58.93 Cobalt Co 1.9 +II +III [Ar] 3d ⁷ 4s ²	28 58.69 Nickel Ni 1.9 +II +III [Ar] 3d ⁸ 4s ²	29 63.55 Copper Cu 1.9 +II +I [Ar] 3d ¹⁰ 4s ¹	30 65.38 Zinc Zn 1.7 +II [Ar] 3d ¹⁰ 4s ²	31 69.72 Gallium Ga 1.6 +III [Ar] 3d ¹⁰ 4s ² 4p ¹	32 72.63 Germanium Ge 1.8 +IV +II [Ar] 3d ¹⁰ 4s ² 4p ²	33 74.92 Arsenic As 2.0 -III +V +III [Ar] 3d ¹⁰ 4s ² 4p ³	34 78.97 Selenium Se 2.4 +IV -II +IV +VI [Ar] 3d ¹⁰ 4s ² 4p ⁴	35 79.90 Bromine Br 2.8 -I +I +III +V [Ar] 3d ¹⁰ 4s ² 4p ⁵	36 83.80 Krypton Kr -- 0 [Ar] 3d ¹⁰ 4s ² 4p ⁶						
PERIOD 5	37 85.47 Rubidium Rb 0.8 +I [Kr] 5s ¹	38 87.62 Strontium Sr 1.0 +II [Kr] 5s ²	39 88.91 Yttrium Y 1.2 +III [Kr] 4d ¹ 5s ²	40 91.22 Zirconium Zr 1.3 +IV [Kr] 4d ² 5s ²	41 92.91 Niobium Nb 1.6 +V +III [Kr] 4d ⁴ 5s ¹	42 95.95 Molybdenum Mo 2.2 +III +VI +II +IV +V [Kr] 4d ⁵ 5s ¹	43 (97) Technetium Tc 1.9 +VII +IV +V [Kr] 4d ⁵ 5s ²	44 101.07 Ruthenium Ru 2.2 +II +III +IV +VI +VIII [Kr] 4d ⁷ 5s ¹	45 102.91 Rhodium Rh 2.3 +III +IV +II [Kr] 4d ⁸ 5s ¹	46 106.42 Palladium Pd 2.2 +II +IV [Kr] 4d ¹⁰	47 107.87 Silver Ag 1.9 +I [Kr] 4d ¹⁰ 5s ¹	48 112.41 Cadmium Cd 1.7 +II [Kr] 4d ¹⁰ 5s ²	49 114.82 Indium In 1.7 +III +I [Kr] 4d ¹⁰ 5s ² 5p ¹	50 118.71 Tin Sn 1.8 +II +IV [Kr] 4d ¹⁰ 5s ² 5p ²	51 121.76 Antimony Sb 1.9 -III +V +III [Kr] 4d ¹⁰ 5s ² 5p ³	52 127.60 Tellurium Te 2.1 +IV -II +IV +VI [Kr] 4d ¹⁰ 5s ² 5p ⁴	53 126.90 Iodine I 2.5 +I +V +VII [Kr] 4d ¹⁰ 5s ² 5p ⁵	54 131.29 Xenon Xe -- 0 [Kr] 4d ¹⁰ 5s ² 5p ⁶						
PERIOD 6	55 132.91 Cesium Cs 0.7 +I [Xe] 6s ¹	56 137.33 Barium Ba 0.9 +II [Xe] 6s ²	57 138.91 Lanthanum La 1.1 +III [Xe] 5d ¹ 6s ²	72 178.49 Hafnium Hf 1.3 +IV [Xe] 4f ¹⁴ 5d ² 6s ²	73 180.95 Tantalum Ta 1.5 +V [Xe] 4f ¹⁴ 5d ³ 6s ²	74 183.84 Tungsten W 1.7 +III +VI +II +IV +V [Xe] 4f ¹⁴ 5d ⁴ 6s ²	75 186.21 Rhenium Re 1.9 +II +VII +IV +V [Xe] 4f ¹⁴ 5d ⁵ 6s ²	76 190.23 Osmium Os 2.2 +II +III +IV +VI +VIII [Xe] 4f ¹⁴ 5d ⁶ 6s ²	77 192.22 Iridium Ir 2.2 +III +IV +V [Xe] 4f ¹⁴ 5d ⁷ 6s ²	78 195.08 Platinum Pt 2.2 +II +IV [Xe] 4f ¹⁴ 5d ⁹ 6s ¹	79 196.97 Gold Au 2.4 +III +I [Xe] 4f ¹⁴ 5d ¹⁰ 6s ¹	80 200.59 Mercury Hg 2.2 +II +I [Xe] 4f ¹⁴ 5d ¹⁰ 6s ²	81 204.38 Thallium Tl 1.8 +III +I [Xe] 4f ¹⁴ 5d ¹⁰ 6s ² 6p ¹	82 207.2 Lead Pb 1.8 +II +IV [Xe] 4f ¹⁴ 5d ¹⁰ 6s ² 6p ²	83 208.98 Bismuth Bi 1.9 +V +III [Xe] 4f ¹⁴ 5d ¹⁰ 6s ² 6p ³	84 (209) Polonium Po [Xe] 4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁴	85 (210) Astatine At [Xe] 4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁵	86 (222) Radon Rn -- 0 [Xe] 4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁶						
PERIOD 7	87 (223) Francium Fr 0.7 +I [Rn] 7s ¹	88 (226) Radium Ra 0.9 +II [Rn] 7s ²	89 (227) Actinium Ac 1.1 +III [Rn] 6d ¹ 7s ²	104 (267) Rutherfordium Rf [Rn] 5f ¹⁴ 6d ² 7s ² *	105 (268) Dubnium Db [Rn] 5f ¹⁴ 6d ³ 7s ²	106 (269) Seaborgium Sg [Rn] 5f ¹⁴ 6d ⁴ 7s ²	107 (270) Bohrium Bh [Rn] 5f ¹⁴ 6d ⁵ 7s ²	108 (269) Hassium Hs [Rn] 5f ¹⁴ 6d ⁶ 7s ²	109 (277) Meitnerium Mt [Rn] 5f ¹⁴ 6d ⁷ 7s ²	110 (281) Darmstadtium Ds [Rn] 5f ¹⁴ 6d ⁸ 7s ²	111 (282) Roentgenium Rg [Rn] 5f ¹⁴ 6d ⁹ 7s ²	112 (285) Copernicium Cn [Rn] 5f ¹⁴ 6d ¹⁰ 7s ²	113 (286) Nihonium Nh [Rn] 5f ¹⁴ 6d ¹⁰ 7s ² 7p ¹	114 (290) Flerovium Fl [Rn] 5f ¹⁴ 6d ¹⁰ 7s ² 7p ²	115 (290) Moscovium Mc [Rn] 5f ¹⁴ 6d ¹⁰ 7s ² 7p ³	116 (293) Livermorium Lv [Rn] 5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁴	117 (294) Tennessine Ts [Rn] 5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁵	118 (294) Oganesson Og -- 0 [Rn] 5f ¹⁴ 6d ¹⁰ 7s ² 7p ⁶ *						



* Atomic weight according to IUPAC International Union of Pure and Applied Chemistry (2022)

† Oxidation states: most common valence in bold print

* Electron configurations according to CRC Handbook of Chemistry and Physics (2022)

* indicates an uncertain electron configuration