

PERIODIC TABLE OF THE ELEMENTS

1 H Hydrogen 1.0	NON-METALS																18 He Helium 4.0
2 He Helium 4.0																	17 F Fluorine 19.0
3 Li Lithium 6.9	4 Be Beryllium 9.0	METALS										13 B Boron 10.8	14 C Carbon 12.0	15 N Nitrogen 14.0	16 O Oxygen 16.0	17 F Fluorine 19.0	18 Ne Neon 20.2
11 Na Sodium 23.0	12 Mg Magnesium 24.3											13 Al Aluminum 27.0	14 Si Silicon 28.1	15 P Phosphorus 31.0	16 S Sulphur 32.1	17 Cl Chlorine 35.5	18 Ar Argon 39.9
19 K Potassium 39.1	20 Ca Calcium 40.1	21 Sc Scandium 45.0	22 Ti Titanium 47.9	23 V Vanadium 50.9	24 Cr Chromium 52.0	25 Mn Manganese 54.9	26 Fe Iron 55.8	27 Co Cobalt 58.9	28 Ni Nickel 58.7	29 Cu Copper 63.5	30 Zn Zinc 65.4	31 Ga Gallium 69.7	32 Ge Germanium 72.6	33 As Arsenic 74.9	34 Se Selenium 79.0	35 Br Bromine 79.9	36 Kr Krypton 83.8
37 Rb Rubidium 85.5	38 Sr Strontium 87.6	39 Y Yttrium 88.9	40 Zr Zirconium 91.2	41 Nb Niobium 92.9	42 Mo Molybdenum 95.9	43 Tc Technetium (98)	44 Ru Ruthenium 101.1	45 Rh Rhodium 102.9	46 Pd Palladium 106.4	47 Ag Silver 107.9	48 Cd Cadmium 112.4	49 In Indium 114.8	50 Sn Tin 118.7	51 Sb Antimony 121.8	52 Te Tellurium 127.6	53 I Iodine 126.9	54 Xe Xenon 131.3
55 Cs Cesium 132.9	56 Ba Barium 137.3	57 La Lanthanum 138.9	58 Ce Cerium 140.1	59 Pr Praseodymium 140.9	60 Nd Neodymium 144.2	61 Pm Promethium (145)	62 Sm Samarium 150.4	63 Eu Europium 152.0	64 Gd Gadolinium 157.3	65 Tb Terbium 158.9	66 Dy Dysprosium 162.5	67 Ho Holmium 164.9	68 Er Erbium 167.3	69 Tm Thulium 168.9	70 Yb Ytterbium 173.0	71 Lu Lutetium 175.0	
87 Fr Francium (223)	88 Ra Radium (226)	89 Ac Actinium (227)	90 Th Thorium 232.0	91 Pa Protactinium 231.0	92 U Uranium 238.0	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (262)	
Alkali Metals	Alkaline Earth Metals	Transition Metals														Halogens	Noble Gases

Atomic Number → 22
Symbol → Ti
Name → Titanium
Atomic Mass → 47.9
Ion charge(s) → 4+, 3+

Based on mass of C-12 at 12.00.
Any value in parentheses is the mass of the most stable or best known isotope for elements which do not occur naturally.

NAMES, FORMULAE AND CHARGES OF SOME POLYATOMIC IONS

Positive Ions	Negative Ions		
NH_4^+ Ammonium	CH_3COO^- Acetate	HCO_3^- Hydrogen carbonate, bicarbonate	NO_2^- Nitrite
	CO_3^{2-} Carbonate	HSO_4^- Hydrogen sulphate, bisulphate	ClO_4^- Perchlorate
	ClO_3^- Chlorate	HS^- Hydrogen sulphide, bisulphide	MnO_4^- Permanganate
	ClO_2^- Chlorite	HSO_3^- Hydrogen sulphite, bisulphite	PO_4^{3-} Phosphate
	CrO_4^{2-} Chromate	OH^- Hydroxide	PO_3^{3-} Phosphite
	CN^- Cyanide	ClO^- Hypochlorite	SO_4^{2-} Sulphate
	$\text{Cr}_2\text{O}_7^{2-}$ Dichromate	NO_3^- Nitrate	SO_3^{2-} Sulphite

FORMULAS

$$V = IR$$

$$P = VI$$

$$E = Pt$$

$$R = \frac{V}{I}$$

$$I = \frac{P}{V}$$

$$P = \frac{E}{t}$$

$$I = \frac{V}{R}$$

$$V = \frac{P}{I}$$

$$t = \frac{E}{P}$$