

Periodic Table of the Elements

Period	1 IA																	18 VIII A
1	1 H 1.008																	2 He 4.003
2	3 Li 6.941	4 Be 9.012											5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
3	11 Na 22.99	12 Mg 24.31	3 III B	4 IV B	5 V B	6 VI B	7 VII B	8 VIII B	9 VIII B	10 VIII B	11 IB	12 II B	13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.95
4	19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.87	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.69	29 Cu 63.55	30 Zn 65.41	31 Ga 69.72	32 Ge 72.64	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
5	37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc 98	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
6	55 Cs 132.9	56 Ba 137.3	71 Lu 175.0	72 Hf 178.5	73 Ta 180.9	74 W 183.8	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po 209	85 At 210	86 Rn 222
7	87 Fr 223	88 Ra 226	103 Lr 262	104 Rf 261	105 Db 262	106 Sg 266	107 Bh 264	108 Hs 277	109 Mt 268	110 Ds 281	111 Rg 272	112 Cn 285	113 Uut 284	114 Fl 289	115 Uup 288	116 Lv 292	117 Uus 293	118 Uuo 294

atomic # → 29
atomic symbol → Cu
atomic weight (IUPAC 2009) ← 63.55

lanthanides (rare earths)	57 La 138.9	58 Ce 140.1	59 Pr 140.9	60 Nd 144.2	61 Pm 145	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0
	actinides	89 Ac 227	90 Th 232.0	91 Pa 231.0	92 U 238.0	93 Np 237	94 Pu 239	95 Am 243	96 Cm 247	97 Bk 247	98 Cf 251	99 Es 252	100 Fm 257	101 Md 258

Molar volume of ideal gas at STP = 22.4 L

Ideal gas constant:

Speed of light, $c = 3.00 \times 10^8 \text{ m}\cdot\text{s}^{-1}$

Faraday constant, $F = 9.6485 \times 10^4 \text{ C/mol e}$

$R = 8.314 \text{ J}\cdot\text{K}^{-1}\cdot\text{mol}^{-1}$

Rydberg constant, $R_H = 2.18 \times 10^{-18} \text{ J}$

Avogadro's number, $N = 6.022 \times 10^{23} \text{ mol}^{-1}$

$R = 1.987 \text{ cal}\cdot\text{K}^{-1}\cdot\text{mol}^{-1}$

Electron charge, $e = 1.602 \times 10^{-19} \text{ C}$

Planck's constant, $h = 6.626 \times 10^{-34} \text{ J}\cdot\text{s}$

$R = 8.206 \times 10^{-2} \text{ L}\cdot\text{atm}\cdot\text{K}^{-1}\cdot\text{mol}^{-1}$

Atomic mass unit, $u = 1.6605 \times 10^{-24} \text{ g}$