

Periodic Table of the Elements

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	IA												VIIIA					
1	1 H 1.008												2 He 4.00					
2	3 Li 6.94	4 Be 9.01											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 24.30										13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.06	17 Cl 35.45	18 Ar 39.95	
4	19 K 39.10	20 Ca 40.08										31 Ga 69.72	32 Ge 72.59	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	57 La 138.9	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 226.0	89 Ac 227.0	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)									

Lanthanides	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 157.2	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
Actinides	90 Th 232.0	91 Pa 231.0	92 U 238.0	93 Np 237.0	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (260)

Solubility Table

<u>Ion</u>	<u>Solubility</u>	<u>Exceptions</u>
NO ₃ ⁻	soluble	none
ClO ₄ ⁻	soluble	none
Cl ⁻	soluble	except Ag ⁺ , Hg ₂ ²⁺ , *Pb ²⁺
SO ₄ ²⁻	soluble	except Ca ²⁺ , Ba ²⁺ , Sr ²⁺ , Hg ²⁺ , Pb ²⁺ , Ag ⁺
CO ₃ ²⁻	insoluble	except Group IA and NH ₄ ⁺
PO ₄ ³⁻	insoluble	except Group IA and NH ₄ ⁺
CrO ₄ ²⁻	insoluble	except Group IA, IIA and NH ₄ ⁺
-OH	insoluble	except Group IA, *Ca ²⁺ , Ba ²⁺ , Sr ²⁺
S ²⁻	insoluble	except Group IA, IIA and NH ₄ ⁺
Na ⁺	soluble	none
NH ₄ ⁺	soluble	none
K ⁺	soluble	none

*slightly soluble

Useful Information

$$\lambda \cdot \nu = c \quad E = h\nu$$

$$1 \text{ nm} = 1 \times 10^{-9} \text{ m}$$

$$c = 3.00 \times 10^8 \frac{\text{m}}{\text{s}}$$

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