

The Periodic Table

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|--------------------------------------|---------------------------|---------------------------|---------------------------|---|--|--------------------------------------|--|--|---|---|---|---------------------------------------|--|---|--|---------------------------------------|--|---|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|---------------------------|----------------------------|----------------------------|
| <i>IA</i> H 1 1.01 | | | | | | | | | | | | | | | | | <i>VIIIA</i> He 2 4.00 | | | | | | | | | | | | | | |
| <i>IIA</i> Li 3 6.94 | Be 4 9.01 | | | | | | | | | | | <i>IIIA</i> B 5 10.81 | <i>IVA</i> C 6 12.01 | <i>V</i> N 7 14.01 | <i>VIA</i> O 8 16.00 | <i>VIIA</i> F 9 19.00 | Ne 10 20.18 | | | | | | | | | | | | | | |
| Na 11 22.99 | Mg 12 24.31 | | | <i>IIIB</i> Sc 21 44.96 | <i>IVB</i> Ti 22 47.88 | <i>VB</i> V 23 50.94 | <i>VIB</i> Cr 24 52.00 | <i>VII</i> Mn 25 54.94 | <i>VIII</i> Fe 26 55.85 | <i>VIII</i> Co 27 58.93 | <i>VIII</i> Ni 28 58.69 | <i>IB</i> Cu 29 63.55 | <i>IIB</i> Zn 30 65.39 | <i>IIIA</i> Ga 31 69.72 | <i>IVA</i> Ge 32 72.61 | <i>V</i> As 33 74.92 | <i>VIA</i> Se 34 78.96 | <i>VIIA</i> Br 35 79.90 | Kr 36 83.80 | | | | | | | | | | | | |
| Rb 37 85.47 | Sr 38 87.62 | Y 39 88.91 | Zr 40 91.22 | Nb 41 92.91 | Mo 42 95.94 | Tc 43 (97.9) | Ru 44 101.07 | Rh 45 102.91 | Pd 46 106.42 | Ag 47 107.87 | Cd 48 112.41 | In 49 114.82 | Sn 50 118.71 | Sb 51 121.76 | Te 52 127.60 | I 53 126.90 | Xe 54 131.29 | | | | | | | | | | | | | | |
| Cs 55 132.91 | Ba 56 137.33 | La 57 138.91 | Hf 72 178.49 | Ta 73 180.95 | W 74 183.85 | Re 75 186.21 | Os 76 190.2 | Ir 77 192.22 | Pt 78 195.08 | Au 79 197.97 | Hg 80 200.59 | Tl 81 204.38 | Pb 82 207.2 | Bi 83 208.98 | Po 84 (209) | At 85 (210) | Rn 86 (222) | | | | | | | | | | | | | | |
| Fr 87 223.02 | Ra 88 226.03 | Ac 89 227.03 | Rf 104 (261) | Db 105 (262) | Sg 106 263 | Bh 107 (262) | Hs 108 (265) | Mt 109 (266) | Ds 110 (271) | Rg 111 (272) | Uub 112 (285) | Uut 113 (284) | Uuq 114 (289) | Uup 115 (288) | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | Ce 58 140.12 | Pr 59 140.91 | Nd 60 144.24 | Pm 61 (145) | Sm 62 150.36 | Eu 63 152.97 | Gd 64 157.25 | Tb 65 158.93 | Dy 66 162.50 | Ho 67 164.93 | Er 68 167.26 | Tm 69 168.93 | Yb 70 173.04 | Lu 71 174.97 |
| | | | | | | | | | | | | | | | | | | Th 90 232.04 | Pa 91 231.04 | U 92 238.03 | Np 93 237.05 | Pu 94 (240) | Am 95 243.06 | Cm 96 (247) | Bk 97 (248) | Cf 98 (251) | Es 99 252.08 | Fm 100 257.10 | Md 101 (257) | No 102 259.10 | Lr 103 262.11 |

Some Useful Formula and Constants:

$$K_p = K_c (RT)^{\Delta n}$$

$$pH + pOH = 14 @ 25^\circ C$$

$$K_a K_b = 1 \times 10^{-14} @ 25^\circ C$$

$$\int_n \frac{K_2}{K_1} = -\frac{\Delta H^\circ}{R} \left(\frac{1}{T_2} - \frac{1}{T_1} \right)$$

$$K_w = 1 \times 10^{-14} @ 25^\circ C$$