

Atomic number

Symbol

Atomic weight

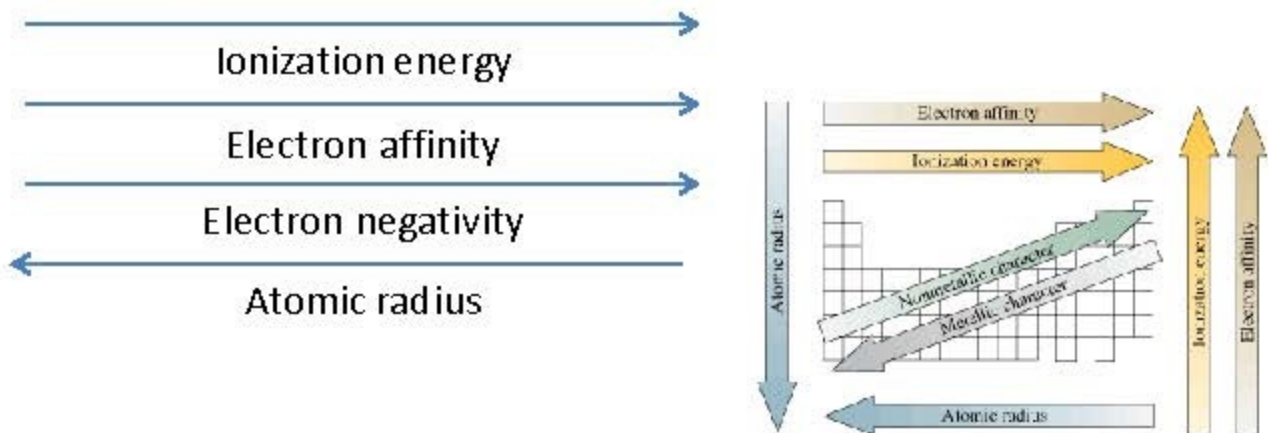
Metal

Semimetal

Nonmetal

| | | | | | | | | | | | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|---------------------------|---------------------------|--------------------------|--------------------------|
| 1 | 2 | | | | | | | | | | | 13 | 14 | 15 | 16 | 17 | 18 |
| 1 H 1.008 | 2 He 4.003 | | | | | | | | | | | 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 Li 6.941 | 4 Be 9.012 | | | | | | | | | | | 13 Al 26.98 | 14 Si 28.09 | 15 P 30.97 | 16 S 32.07 | 17 Cl 35.45 | 18 Ar 39.95 |
| 11 Na 22.99 | 12 Mg 24.31 | 3 Sc | 4 Ti | 5 V | 6 Cr | 7 Mn | 8 Fe | 9 Co | 10 Ni | 11 Cu | 12 Zn | 31 Ga 69.72 | 32 Ge 72.61 | 33 As 74.92 | 34 Se 78.96 | 35 Br 79.90 | 36 Kr 83.80 |
| 19 K 39.10 | 20 Ca 40.08 | 21 Sc 44.96 | 22 Ti 47.88 | 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 65.39 | 31 Ga 69.72 | 32 Ge 72.61 | 33 As 74.92 | 34 Se 78.96 | 35 Br 79.90 | 36 Kr 83.80 |
| 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 98.91 | 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 |
| 55 Cs 132.9 | 56 Ba 137.3 | 57 La 138.9 | 58 Ce 140.1 | 59 Pr 140.9 | 60 Nd 144.2 | 61 Pm 146.9 | 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 | 85 At 220.0 | 86 Rn 222.0 |
| 87 Fr 223.0 | 88 Ra 226.0 | 89 Ac 227.0 | 90 Th 232.0 | 91 Pa 231.0 | 92 U 238.0 | 93 Np 237.0 | 94 Pu 244.1 | 95 Am 243.1 | 96 Cm 247.1 | 97 Bk 247.1 | 98 Cf 251.1 | 99 Es 252.0 | 100 Fm 257.1 | 101 Md 258.1 | 102 No 259.1 | 117 Uus 289 | 118 Uuo 293 |

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▲ FIGURE 9-11 Atomic properties and the periodic table—a summary

Atomic radius refers to metallic radius for metals and covalent radius for nonmetals. Ionization energies refer to first ionization energy. For a electron affinity, the direction of increasing EA is that in which values become more negative. Metallic character relates generally to the ability to lose electrons, and nonmetallic character to the ability to gain electrons.