1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Akali Mtls	Alkln Earths	-- Transition Metals --						Lanthanides & Actinides		Metals		Metalloids		Nonmetals		Halogens	Noble Gases	
Hydrogen **1** 1.008 **H** (259) (253) 2.2 .79 (.09) 13.6 .012 gas																	Helium **2** 4.003 **He** (272) (269) — .49 (.18) 24.6 — gas	1s2
Lithium **3** 6.941 **Li** 181 1342 1.0 2.1 .53 5.4 .76 bcc	Beryllium **4** 9.01 **Be** 1278 2970 1.6 1.4 1.8 9.3 .35 hex											Boron **5** 10.8 **B** 2300 4002 2.0 1.2 2.3 8.3 .23 rho	Carbon **6** 12.0 **C** 3500 4827 2.6 .91 2.3 11.3 — hex	Nitrogen **7** 14.0 **N** (210) (196) 3.0 .75 (1.25) 14.5 .13 gas	Oxygen **8** 16.0 **O** (223) (183) 3.4 .65 (1.43) 13.6 1.4 gas	Fluorine **9** 19.0 **F** (220) (188) 4.0 .57 (1.7) 17.4 1.3 gas	Neon **10** 20.2 **Ne** (248) (246) — .51 (.9) 21.6 — gas	2s2 2p6
Sodium **11** 23.0 **Na** 98 883 0.9 2.2 .97 5.1 1.0 bcc	Magnesium **12** 24.3 **Mg** 649 1090 1.3 1.7 1.7 7.6 .72 hex											Aluminum **13** 27.0 **Al** 660 2467 1.6 1.8 2.7 6.0 .54 fcc	Silicon **14** 28.1 **Si** 1410 2355 1.9 1.5 2.3 8.2 .4 fcc	Phosphorus **15** 31.0 **P** 44 280 2.2 1.2 1.8 10.5 .38 cub	Sulfur **16** 32.1 **S** 115 445 2.6 1.1 2.1 10.4 .37 orth	Chlorine **17** 35.5 **Cl** (101) (34) 3.2 .97 (3.2) 13.0 1.8 gas	Argon **18** 39.9 **Ar** (189) (186) — .88 (1.8) 15.8 — gas	3s2 3p6
Potassium **19** 39.1 **K** 63 759 0.8 2.8 .86 4.3 1.4 bcc	Calcium **20** 40.1 **Ca** 839 1484 1.0 2.2 1.55 6.1 .99 fcc	Scandium **21** 45.0 **Sc** 1539 2831 1.4 2.1 3.0 6.5 .75 hex	Titanium **22** 47.9 **Ti** 1660 3287 1.5 2.0 4.5 6.8 .61 hex	Vanadium **23** 50.9 **V** 1902 3409 1.6 1.9 6.1 6.7 .59 bcc	Chromium **24** 52.0 **Cr** 1857 2672 1.7 1.9 7.2 6.8 .52 bcc	Manganese **25** 54.9 **Mn** 1244 1962 1.6 1.8 7.4 7.4 .46 bcc	Iron **26** 55.8 **Fe** 1535 2750 1.8 1.7 7.9 7.9 .65 bcc	Cobalt **27** 58.9 **Co** 1495 2870 1.9 1.7 8.9 7.9 .75 hex	Nickel **28** 58.7 **Ni** 1453 2732 1.9 1.6 8.9 7.6 .69 fcc	Copper **29** 63.5 **Cu** 1085 2567 1.9 1.6 9.0 7.7 .73 fcc	Zinc **30** 65.4 **Zn** 420 907 1.7 1.5 7.1 9.4 .74 hex	Gallium **31** 69.7 **Ga** 30 2403 1.8 1.8 5.9 6.0 .62 orth	Germanium **32** 72.6 **Ge** 937 2830 2.0 1.5 5.3 7.9 .53 fcc	Arsenic **33** 74.9 **As** 808 603 2.2 1.3 5.7 9.8 .58 rho	Selenium **34** 79.0 **Se** 221 685 2.6 1.2 4.8 9.8 .5 hex	Bromine **35** 79.9 **Br** (7) 59 3.0 1.1 3.1 11.8 2.0 liq	Krypton **36** 83.8 **Kr** (157) (153) — 1.0 (3.8) 14.0 — gas	4s2 3d10 4p6
Rubidium **37** 85.5 **Rb** 40 688 0.8 3.0 1.6 4.2 1.5 bcc	Strontium **38** 87.6 **Sr** 769 1384 1.0 2.5 2.5 5.7 1.1 fcc	Yttrium **39** 88.9 **Y** 1526 3338 1.2 2.3 4.5 6.4 .9 hex	Zirconium **40** 91.2 **Zr** 1852 4377 1.3 2.2 6.5 6.8 .72 hex	Niobium **41** 92.9 **Nb** 2468 4744 1.6 2.1 8.6 6.9 .69 bcc	Molybdenum **42** 95.9 **Mo** 2617 4612 2.2 2.0 10.2 7.1 .65 bcc	Technetium **43** (98) 2200 4877 1.9 2.0 11.5 7.3 .56 hex	Ruthenium **44** 101.0 **Ru** 2250 3900 2.2 1.9 12.4 7.4 .68 hex	Rhodium **45** 103.0 **Rh** 1966 3727 2.3 1.8 12.4 7.5 .68 fcc	Palladium **46** 106.0 **Pd** 1552 2964 2.2 1.8 12.0 8.3 .86 fcc	Silver **47** 108.0 **Ag** 961 2163 1.9 1.8 10.5 7.6 1.3 fcc	Cadmium **48** 112.0 **Cd** 321 765 1.7 1.7 8.7 9.0 .97 hex	Indium **49** 115.0 **In** 157 2073 1.8 2.0 7.3 5.8 .8 tet	Tin **50** 119.0 **Sn** 232 2270 2.0 1.7 7.3 7.3 .69 tet	Antimony **51** 122.0 **Sb** 631 1587 2.1 1.5 6.7 8.6 .76 rho	Tellurium **52** 128.0 **Te** 450 988 2.1 1.4 6.2 9.0 .97 hex	Iodine **53** 127.0 **I** 114 185 2.7 1.3 4.9 10.5 2.2 orth	Xenon **54** 131.0 **Xe** (112) (108) — 1.2 (5.9) 12.1 — gas	5s2 4d10 5p6
Cesium **55** 133.0 **Cs** 29 671 0.8 3.3 1.9 3.9 1.7 bcc	Barium **56** 137.0 **Ba** 729 1898 0.9 2.8 3.6 5.2 1.4 bcc	Lanthanum **57** **La**	Hafnium **72** 178.0 **Hf** 2227 4603 1.3 2.2 13.3 6.7 .71 hex	Tantalum **73** 181.0 **Ta** 2996 5425 1.5 2.1 17.0 7.9 .64 bcc	Tungsten **74** 184.0 **W** 3407 5655 2.4 2.0 19.0 8.0 .62 bcc	Rhenium **75** 186.0 **Re** 3180 5627 1.9 2.0 21.0 7.9 .56 hex	Osmium **76** 190.0 **Os** 3027 5012 2.2 1.9 23.0 8.7 .63 hex	Iridium **77** 192.0 **Ir** 2443 4428 2.2 1.9 22.0 9.1 .63 fcc	Platinum **78** 195.0 **Pt** 1772 3827 2.3 1.8 21.0 9.0 .63 fcc	Gold **79** 197.0 **Au** 1065 2807 2.5 1.8 19.0 9.2 .85 fcc	Mercury **80** 201.0 **Hg** (39) 357 2.0 1.8 13.5 10.4 1.0 liq	Thallium **81** 204.0 **Tl** 304 1473 2.0 2.1 11.9 6.1 1.5 hex	Lead **82** 207.0 **Pb** 328 1740 2.3 1.8 11.4 7.4 1.2 fcc	Bismuth **83** 209.0 **Bi** 272 1564 2.0 1.6 9.8 7.3 1.0 rho	Polonium **84** (209) 254 962 2.0 1.5 9.3 8.4 2.3 cub	Astatine **85** (210) 302 337 2.2 1.4 — 9.7 —	Radon **86** (222) (71) (62) — 1.3 (9.7) 10.7 — gas	6s2 4f14 6p6
Francium **87** (223) **Fr** 27 677 0.7 — — 3.8 1.8 bcc	Radium **88** 226.0 **Ra** 700 1536 0.9 — 5.5 5.3 1.4 bcc	Actinium **89** **Ac**	Rutherfordium **104** (261) **Rf** — — — —	Dubnium **105** (262) **Db** — — — —	Seaborgium **106** (263) **Sg** — — — —	Bohrium **107** (262) **Bh** — — — —	Hassium **108** (265) **Hs** — — — —	Meitnerium **109** 266.0 **Mt** — — — —	Ununnilium **110** — Unn — — — —	Unununium **111** — Uuu — — — —	Ununbium **112** — Uub — — — —	Ununquadium **114** — Uuq — — — —	Ununhexium **116** — Uuh — — — —	Ununoctium **118** — Uuo — — — —	7s2 6d10 5f14 7p6

Lanthanum	Cerium	Praseodymium	Neodymium	Promethium	Samarium	Europium	Gadolinium	Terbium	Dysprosium	Holmium	Erbium	Thulium	Ytterbium	Lutetium
57 139.0 **La** 920 3457 1.1 2.7 6.2 5.6 1.1 hex	**58** 140.0 **Ce** 798 3426 1.1 2.7 6.8 5.5 1.0 fcc	**59** 141.0 **Pr** 931 3512 1.1 2.7 6.8 5.5 1.0 hex	**60** 144.0 **Nd** 1016 3068 1.1 2.6 7.0 5.5 1.0 hex	**61** 145.0 **Pm** 931 3512 1.1 2.6 7.3 5.6 .98 hex	**62** 150.0 **Sm** 1072 1791 1.2 2.6 7.5 5.6 .96 rho	**63** 152.0 **Eu** 822 1597 1.2 2.6 5.2 5.7 .95 bcc	**64** 157.0 **Gd** 1312 3266 1.2 2.5 7.9 6.2 .94 hex	**65** 159.0 **Tb** 1357 3023 1.2 2.5 8.2 5.9 .92 hex	**66** 163.0 **Dy** 1412 2562 1.2 2.5 8.6 5.9 .91 hex	**67** 165.0 **Ho** 1470 2695 1.2 2.5 8.8 6.0 .9 hex	**68** 167.0 **Er** 1522 2863 1.2 2.5 9.1 6.1 .88 hex	**69** 169.0 **Tm** 1545 1947 1.3 2.4 9.3 6.2 .87 hex	**70** 173.0 **Yb** 824 1194 1.1 2.4 6.9 6.3 .86 fcc	**71** 175.0 **Lu** 1663 3395 1.3 2.3 9.8 5.4 .85 hex
Actinium **89** 227.0 **Ac** 1050 3200 1.1 — 10.1 5.2 1.1 fcc	Thorium **90** 232.0 **Th** 1755 4788 1.3 — 11.7 6.1 .97 fcc	Protactinium **91** 231.0 **Pa** 1600 4027 1.5 — 15.4 5.9 .78 orth	Uranium **92** 238.0 **U** 1132 4134 1.4 — 19.0 6.1 .52 orth	Neptunium **93** 237.0 **Np** 640 3902 1.4 — 20.0 6.2 .75 orth	Plutonium **94** (244) **Pu** 640 3230 1.3 — 20.0 6.1 .89 mnc	Americium **95** (243) **Am** 994 2607 1.3 — 13.7 6.0 .98 hex	Curium **96** (247) **Cm** 1067 3110 1.3 — 13.5 6.0 .97 hex	Berkelium **97** (247) **Bk** 986 — 1.3 — 14.8 6.2 .95 hex	Californium **98** (251) **Cf** 900 — 1.3 — 15.1 6.3 .93 hex	Einsteinium **99** (252) **Es** 860 — 1.3 — — 6.4 — hex	Fermium **100** (257) **Fm** 1527 — 1.3 — — 6.5 — —	Mendelevium **101** (258) **Md** 827 — 1.3 — — 6.6 — —	Nobelium **102** (259) **No** 827 — 1.3 — — 6.7 — —	Lawrencium **103** (262) **Lr** 1627 — — — — — — —

Atomic Number (# protons)
Symbol; Color shows phase:
Gas Liquid Solid Synthetic
Electronegativity (Pauling)
First Ionization Potential, eV

Element
#
Sy
e- Arad Dens
eV Irad Str

Atomic Radius, Å (10^{-10} m)
Ionic Radius, Å (10^{-10} m)

Atomic Weight, g/mol, 1999 IUPAC
Melting Point, °C, 1 atm
Boiling Point, °C, 1 atm
Density; solids: g/cc, (gases): (g/L)
Most common crystal structure

Wt
Melt
Boil
Dens
Str