Periodic Table of the Elements

1A 1												3A 13	4A 14	5A 15	6A 16	7A 17	8A 18
1 H 1.008	2A 2																2 He 4.003
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
11 Na 22.99	12 Mg 24.31	3B 3	4B 4	5B 5	6B 6	7B 7	8B 8	8B 9	8B 10	1B 11	2B 12	13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.95
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 65.38	31 Ga 69.72	32 Ge 72.64	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)	44 Ru 101.07	45 Rh 102.91	46 Pd 106.42	47 Ag 107.87	48 Cd 112.41	49 In 114.82	50 Sn 118.71	51 Sb 121.76	52 Te 127.60	53 I 126.90	54 Xe 131.29
55 Cs 132.91	56 Ba 137.33	57 La 138.91	72 Hf 178.49	73 Ta 180.95	74 W 183.84	75 Re 186.21	76 Os 190.23	77 Ir 192.22	78 Pt 195.08	79 Au 196.97	80 Hg 200.59	81 Tl 204.38	82 Pb 207.20	83 Bi 208.98	84 Po (209)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra (226)	89 Ac (227)	104 Rf (261)	105 Db (262)	106 Sg (266)	107 Bh (264)	108 Hs (277)	109 Mt (268)	110 Ds (281)	111 Rg (281)	112 Cn (285)	113 Nh (286)	114 Fl (289)	115 Mc (289)	116 Lv (293)	117 Ts (293)	118 Og (294)

58 Ce 140.12	59 Pr 140.91	60 Nd 144.24	61 Pm (145)	62 Sm 150.36	63 Eu 151.96	64 Gd 157.25	65 Tb 158.93	66 Dy 162.50	67 Ho 164.93	68 Er 167.26	69 Tm 168.93	70 Yb 173.04	71 Lu 174.97
90 Th 232.04	91 Pa 231.04	92 U 238.03	93 Np (237)	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 (262)

constants

$R = 8.314$ J/mol K

$R = 0.08206$ L·atm/mol·K

$R = 62.36$ L·torr/mol·K

$N_A = 6.022 \times 10^{23}$ /mol

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

$k = 1.38 \times 10^{-23}$ J/K
Boltzmann constant

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

$F = 96485$ C/mol e$^-$

$e = 1.602 \times 10^{-19}$ C
charge on one electron

$g = 9.81$ m/s^2

$\mathscr{R} = 2.18 \times 10^{-18}$ J

$\mathscr{R} = 3.29 \times 10^{15}$ s^{-1}

$\mathscr{R} = 1.097 \times 10^{7}$ m^{-1}
Rydberg constants

conversions

1 atm = 760 torr

1 atm = 101325 Pa

1 atm = 1.01325 bar

1 atm = 14.7 psi

1 bar = 10^5 Pa

1 L·atm = 101.325 J

1 cal = 4.184 J

1 eV = 1.602×10^{-19} J

1 W = 1 J/s

1 in = 2.54 cm

1 ft = 12 in

1 yd = 3 ft

1 mi = 5280 ft

1 Å = 10^{-10} m

1 lb = 453.6 g

1 gal = 3.785 L

1 gal = 231 in^3

H_2O water data

$C_{s,ice} = 2.09$ J/g K

$C_{s,water} = 4.184$ J/g K

$C_{s,steam} = 2.03$ J/g K

$\rho_{water} = 1.000$ g/mL

$\rho_{ice} = 0.9167$ g/mL

$\Delta H_{fus} = 334$ J/g

$\Delta H_{vap} = 2260$ J/g

Average Bond Energies (kJ/mol)					
C–H	413	C–C	347	C–Cl	339
C–O	358	C–N	305	C–Br	276
H–H	432	H–Cl	427	O–H	467
H–I	295	N–H	391	S–H	347
H–F	565	F–F	154	N–F	272
H–Br	363	Cl–Cl	239	Br–Br	193
I–I	149	C=O	799	C=C	614
O=O	495	N=N	418	C≡O	1072
C≡C	839	N≡N	941	C≡N	891