CHM 130 Periodic Table

IA	IIA	IIIB	IVB	VB	VIB	VIIB	VIIIB	VIIIB	VIIIB	IB	IIB	IIIA	IVA	VA	VIA	VIIA	VIIIA
1 H 1.01																	2 He 4.00
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
11 Na 22.99	12 Mg 24.31											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 47.88	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 65.38	31 Ga 69.72	32 Ge 72.59	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 (99)	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 121.75	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 183.85	75 Re 186.21	76 Os 190.2	77 Ir 192.22	78 Pt 195.09	79 Au 196.97	80 Hg 200.59	81 Tl 204.38	82 Pb 207.2	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 (263)	107 Bh (264)	108 Hs (265)	109 Mt (266)	110 Ds (271)	111 Rg (272)	112 Cn (285)	113 Uut (284)	114 Fl (289)	115 Uup (288)	116 Lv (293)	117 Uus (294)	118 Uuo (294)

*Lanthanides	58 Ce 140.12	59 Pr 140.91	60 Nd 144.24	61 Pm (145)	62 Sm 150.4	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
*Actinides	90 Th 232.04	91 Pa (231)	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 (260)

Most Common Polyatomic Ions

NH_4^+ = ammonium

$C_2H_3O_2^-$ = acetate
OH^- = hydroxide
CN^- = cyanide
MnO_4^- = permanganate

NO_3^- = nitrate
NO_2^- = nitrite
SO_4^{2-} = sulfate
SO_3^{2-} = sulfite
PO_4^{3-} = phosphate
CrO_4^{2-} = chromate
$Cr_2O_7^{2-}$ = dichromate

CO_3^{2-} = carbonate
HCO_3^- = hydrogen carbonate or bicarbonate

Activity Series and List of Active Metals (Underlined)

Li > K > Ba > Sr > Ca > Na > Mg > Al > Mn > Zn >
Fe > Cd > Co > Ni > Sn > Pb > (H) > Cu > Ag > Hg > Au

Solubility Rules

Generally **soluble** compounds with:

1. Li^+, Na^+, K^+, NH_4^+ (**ALWAYS!**)
2. acetate ion ($C_2H_3O_2^-$)
3. nitrate ion (NO_3^-)
4. halide ions (X): Cl^-, Br^-, and I^- BUT AgX, HgX_2, and PbX_2 are all **insoluble**
5. sulfate ion (SO_4^{-2}), BUT $CaSO_4$, $SrSO_4$, $BaSO_4$, Ag_2SO_4, $PbSO_4$ are all **insoluble**

Generally **insoluble** compounds with:

6. carbonate ion (CO_3^{2-})
7. chromate ion (CrO_4^{2-})
8. phosphate ion (PO_4^{3-})
9. sulfide ion, BUT CaS, SrS, and BaS are all **soluble**
10. hydroxide ion, BUT $Ca(OH)_2$, $Sr(OH)_2$, and $Ba(OH)_2$ are **soluble**