

CHM 130 Periodic Table

IA 1 H 1.01																	VIIIA 2 He 4.00
3 Li 6.94	IIA 4 Be 9.01											IIIA 5 B 10.81	IVA 6 C 12.01	V 7 N 14.01	VIA 8 O 16.00	VIIA 9 F 19.00	10 Ne 20.18
11 Na 22.99	12 Mg 24.31	IIIB	IVB	VB	VIB	VIIIB	VIIIB	VIIIB	VIIIB	IB	IIIB	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 Ff (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	NO_3^- = nitrate
$\text{C}_2\text{H}_3\text{O}_2^-$ = acetate	NO_2^- = nitrite
OH^- = hydroxide	SO_4^{2-} = sulfate
CN^- = cyanide	SO_3^{2-} = sulfite
MnO_4^- = permanganate	PO_4^{3-} = phosphate
	CrO_4^{2-} = chromate
	$\text{Cr}_2\text{O}_7^{2-}$ = 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 ($\text{C}_2\text{H}_3\text{O}_2^-$)
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**