

Today, Friday 8/31 : Nomenclature 2.10-2.12
 Tuesday 9/4 : lab expt 2, write intro
 Wednesday 9/5 : finish ch 2 (sections 6-9)
 Friday: review and nomenclature quiz

"Soluble Iron"

For every 10.00g Fe
 there is 5.74g S and
 11.46g O

$$\frac{10.00g \text{ Fe}}{5.74g \text{ S}} = 1.74$$

"Insoluble Iron"

For every 10.00g Fe
 there is 8.61g S and
 17.14g O

$$\frac{10.00g \text{ Fe}}{8.61g \text{ S}} = 1.16$$

$$\frac{1.74}{1.16} = 1.4999 = \frac{3}{2}$$

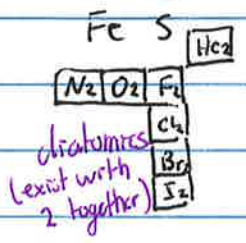
law of multiple proportions

Pure substances

elements

compound

2 or more elements



Ionic: metal cation + non-metal anion
 or
 polyatomic anions
 or
 ammonium cation

Covalent-molecular: non-metal + non-metal

Naming ionic compounds

- Group I metals like to form +1 cations
- Group II metals like to form +2 cations
- All metals like to form cations

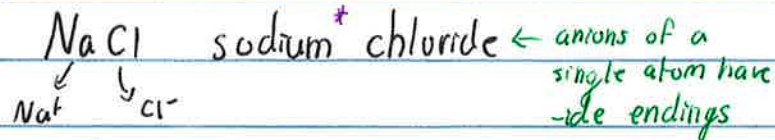
↳ Al forms Al^{3+} in its ionic compounds

- Halogens like to form -1 anions
- Oxygen family can form -2 ions
- Nitrogen family can form -3 ions

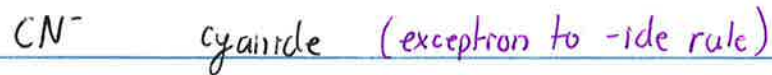
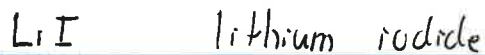
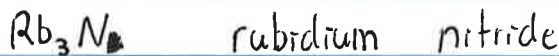
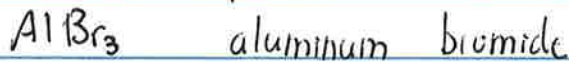
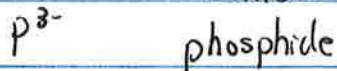
Cations = positive
Think "plus-y cat"



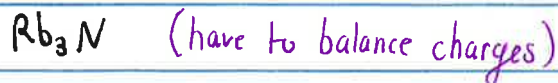
- Binary ionic: metal in cationic form and nonmetal anion



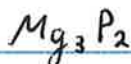
* Cation named first = same as element



Rubidium Nitride



Magnesium phosphide



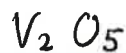
Naming with transition metals



FeF_2 Iron (II) fluoride

↑ roman numeral tells you the charge

chromium (III) sulfide Cr_2S_3



vanadium (V) oxide

Polyatomic anions

NO_2^- nitrite (goes with lower number) SO_3^{2-} sulfite

NO_3^- nitrate (goes with higher number) SO_4^{2-} sulfate

cobalt (II) nitrite $\text{Co}(\text{NO}_2)_2$

$\text{Mn}(\text{ClO}_2)_2$ manganese (II) chlorite

ClO^- hypochlorite

ClO_2^- chlorite

ClO_3^- chlorate

ClO_4^- perchlorate

Covalent - moleculars (non-metal + non-metal)

mono- is unnecessary on first element

CO carbon monoxide

CO_2 carbon dioxide

SF_4 Sulfur tetrafluoride

SO_3 sulfur trioxide

N_2O_4 dinitrogen tetroxide

P_4O_{10} tetraphosphorus hexoxide

Cl_2O dichlorine monoxide

prefixes

mono 1

di 2

tri 3

tetra 4

penta 5

hexa 6

hepta 7