

Naming Compounds

① Look up the names of both symbols



Sodium sulfate

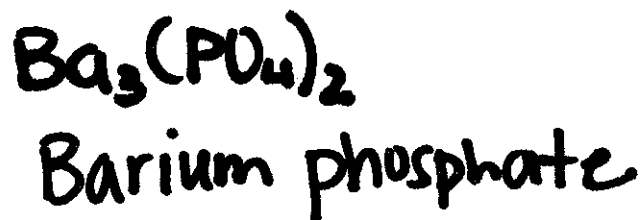
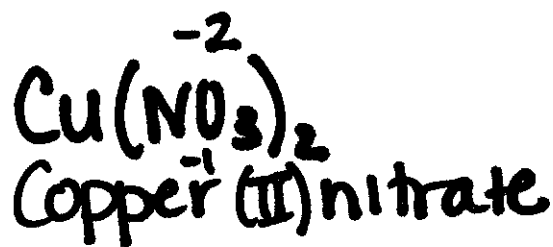
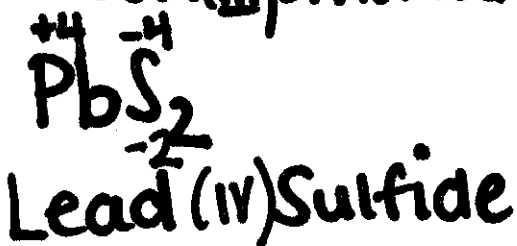
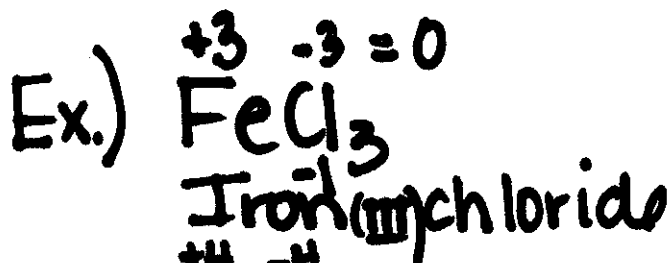
② Write the full name of first element^(or ion) listed

• if it is a metal w/ more than one charge listed, include Roman numeral.

③ Write the second element's name, but drop ending and add -ide.

OR

Write the full name of polyatomic ion



Formulas + Math

Writing Formulas

- ① Find the symbols for the 2 parts of the formula

"+" and "-"
always listed first second name

- Table S (element name)

- Table E (polyatomic ions ... -ite or -ate)

- ② Write the symbols w/ charges

Ex.) Calcium chloride

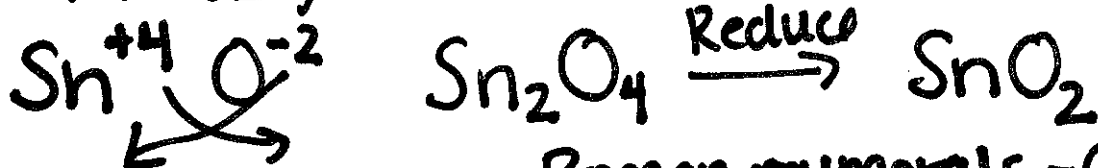


- ③ Swap + Drop (make overall charge zero)



- ④ Reduce subscripts to lowest ratio

Ex.) Tin (IV) oxide



Roman numerals = Charge

Gram Formula Mass - mass of one mole of a substance

★ From the periodic table

Ex.) Na - 22.99 g

NaOH - 22.99 g + 16.00 g + 1.01 g = 39.99 g

Ba₃(PO₄)₂ Ba - 3
 P - 2
 O - 8

Converting between moles & mass

2.0 mole Fe = ? g

2.0 mol Fe \times $\frac{55.85 \text{ g}}{1 \text{ mol}}$ = 111.7 g ~ 110

15.0 g O₂ = ? mol

15.0 g O₂ \times $\frac{1 \text{ mol}}{32.00 \text{ g}}$ = .469 mol

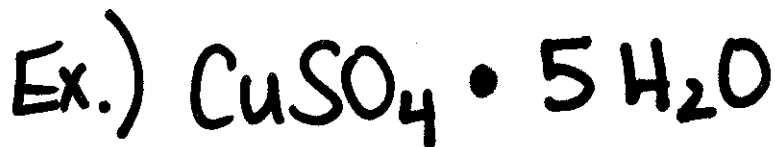
% Composition - TABLE T

$$\% = \frac{\text{Mass of part} \leftarrow \text{Cl}}{\text{Mass of whole} \leftarrow \text{CaCl}_2} \times 100$$

What is the % comp. of Cl in CaCl_2 ?

$$\% = \frac{\text{mass Cl}}{\text{mass CaCl}_2} \times 100$$

Hydrates - ionic compound w/ H_2O molecules attached



Find % H_2O in hydrate.

$$\% = \frac{\text{Mass of } 5\text{H}_2\text{O}}{\text{Mass of } \text{CuSO}_4 \cdot 5\text{H}_2\text{O}}$$

• heating a hydrate removes H_2O

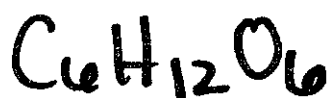
Mass of hydrate before heating - Mass of hydrate after heating

=
Mass of H_2O

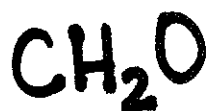
Empirical vs. Molecular

Empirical Formula - lowest ratio (subscripts reduced)

Molecular Formula - gives exact # of atoms of each element



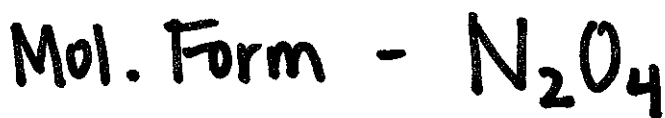
Molecular



Empirical

Converting to Molecular Formula from EF

- Molecular formula is a multiple of empirical formula



- Molecular Formula Mass is a multiple of empirical formula mass.

Ex.) EF - CH_4 and a molar mass of 48g.

Find molecular formula.



$$\frac{48g}{16g} = 3$$

