Unit 7 Notes Continued

Percent composition

-Relative amounts of each element in a compound.

-% by mass of each element in a compound.

-Round percentages to two decimal places.

% composition = mass of element x 100%

mass of compound

Ex: Find the percent composition of aluminum sulfate.

Ex: Calculate the mass of carbon in 82.0 g of propane C3H8.

Empirical formulas

-Formula giving the lowest whole number ratio of the atoms of the elements in a compound.

Ex: What is the empirical formula of a compound that is 25.9 % nitrogen and 74.1 % oxygen?

1. Determine the number of moles of each element
2. Divide the number of moles of each element by the smaller # of moles

Ex: What is the empirical formula of a compound that is 66.0 % Ca and 34.0 % P?

Molecular Formula

-Must have the substances empirical formula and its molar mass.

Ex: Calculate the molecular formula of the compound whose molar mass is 60.0 g

and empirical formula is CH4N.

1. Calculate the empirical formula mass.
2. Divide the molar mass by the empirical formula mass.
3. This gives the number of empirical formula units in a molecule of the compound.

This is the multiplier to convert empirical formula to molecular formula.