**Directions for % Composition**

% Composition is done the same as average atomic mass (where you calculated the % of each isotope by mass to get the average mass).

% Composition from Mass– If the problem gives you the mass of the compound and the mass of the individual elements, you can calculate each element’s percentage of the total compound.

Example: There is 13.60 g of a compound of Mg and O. The O is 5.40 g.

Mass of compound = 13.60 g

Mass of O = 5.40 g

Mass Mg is 13.60-5.40 = 8.20 g

% O = 5.40g X 100 = 39.7% % Mg = 8.20 g X 100 = 60.3%

13.60 g 13.60 g

% Composition from Chemical Formula – If the problem gives you the chemical formula, then you can get mass information from the periodic table and calculate each element’s percentage.

Example: What is the % composition of Sodium nitrate?

NaNO3

Mass of Na = 23.0 g % Na = 23.0 g X 100 = 27.1 %

Mass of N = 14.0 g 85.0 g

Mass of 3O = 48.0 g

Mass of NaNO3 = 85.0 g % N = 14.0 g X 100 = 16.5 %

85.0 g

% O = 48.0 g X 100 = 56.5 %

85.0 g

Use this % composition to find the grams of any element in a certain mass of compound.

You can always make the ratio of the mass as a % over 100.

Example from above problem: % Na is 27.1% This means you can say 27.1g N

100 g NaNO3

So if you have 352 g of NaNO3, set up a ratio:

27.1 g N X 352 g NaNO3 = 95.4 g N

100 g NaNO3

If you need further explanation or examples, it is on page 305-308