Warm-Up:

1. How many *moles* are there in a 13.7 gram sample of aluminum sulfate?

2. Using your answer to #1, calculate the *number of oxygen atoms* in the aluminum sulfate

3. Our classroom has a volume of 3.48×10^5 liters. If the room were at STP conditions, then *how many molecules* of air fill the room?

- Percent Composition: tells the percentage by mass of an element

Ex: H_2O

H: 1.01×2
O: 16.0
$\rightarrow$ 18.02 g/mol

$\%H = \frac{2.02}{18.02} \cdot 100 = 11.2\%$

$\%O = \frac{16.0}{18.02} \cdot 100 = 88.8\%$

Ex 2:

How many grams of copper in 12 g of Copper(II) Sulfate? $CuSO_4$

Cu = 63.55
S = 32.06
O_4 = 16 × 4
$\rightarrow$ = 159.61 g/mol

$\rightarrow \frac{63.55}{159.61} = 0.3981 \cdot 12g = \boxed{50.9\ g\ Cu}$

Challenge Problem:

Find the % comp of a compound containing N and O if a 30.2 g sample contains 11.7 g of N.

$\frac{11.7g\ N}{30.2g\ \text{whole}} \cdot 100 = \boxed{38.7\%\ N}$

$30.2 - 11.7 = \frac{18.5g\ O}{30.2g\ \text{whole}} \cdot 100 = \boxed{61.3\%\ O}$