

LO: Students will be able to determine the percent mass of elements in chemical compounds.

DOL: Students will correctly calculate percent mass at least 4/5 times.

Review of compounds:

- ionic compounds consist of metals bonded to nonmetals and/or polyatomic ions
- covalent compounds consist of only nonmetals

Molar mass is how much one mole of some substance weighs.

The masses on the periodic table tell us how many grams a mol of that element weighs

Find the molar mass of the following:

1) calcium chloride

2) dinitrogen tetraoxide

3) sodium carbonate

4) carbon monoxide

Percent mass

It is often important to be able to determine the percent mass of individual atoms in molecules.

In order to do this, first determine the **molar mass** of the species.

Then determine the molar mass of each element and multiply this by how many there are of each.

Finally, take this number and divide it by the total molar mass of the species.

Example:

Determine what percent (by mass) of H_2SO_4 is Oxygen.

If a compound contains 1.54 mols of Fe and 2.31 mol of oxygen, what is the percent mass of each element?

Hydrates: chemical compounds, in the solid state, that contain water molecules.

To show the water bonded to the compound, we use a dot.

Example: $\text{MgCrO}_4 \cdot 5\text{H}_2\text{O}$

To name this, simply state the compound's name and then use prefixes to say how many waters (known as hydrates) are attached.

magnesium chromate pentahydrate

What percent of magnesium chromate pentahydrate is water?