

Chemical Composition-Percent Composition

Concepts

- Remember that a compound is a combination of two or more elements that are chemically bonded together.
- Molar Mass is the mass of one mole (6.022×10^{23} particles) of a substance.
- The percent composition tells you, by mass, what percentage of each element is present in the compound.
- It is simply doing a percentage calculation (part/whole then $\times 100$)

Percent Composition

Equation

Molecular formula = $A_x B_y C_z$



$$\text{Percent Composition} = \frac{\text{Mass of element in 1 mole of a compound}}{\text{Molar mass of the compound}} \times 100$$

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Example: Determine the Percent Composition of Oxygen in water, H_2O .

Example A: Determine the Percent Composition of Carbon and Nitrogen in $\text{C}_{17}\text{H}_{21}\text{NO}_4$.

Extension: How many atoms of Carbon are in a 234g sample of $\text{C}_{17}\text{H}_{21}\text{NO}_4$?

Example B: Determine the Percent Composition of Oxygen and Hydrogen in $\text{C}_{22}\text{H}_{28}\text{N}_2\text{O}$.

Extension: How many atoms of Hydrogen are in a 234g sample of $\text{C}_{17}\text{H}_{21}\text{NO}_4$?