Percent Composition

Determining Percent Composition

- **Step 1**: Determine the formula mass.
- **Step 2**: Divide the mass of each element by the mass of the compound and multiply each by 100 %.

Sample Problem

What is the percent composition of $Ca(OH)_2$?

- **Step 1:** Determine the formula mass

$Ca(OH)_2$

Ca = 40 × 1 = 40

O = 16 × 2 = 32

H = 1 × 2 = 2

74

- **Step 2:** Divide the mass of each element in the compound by the mass of the compound and multiply by 100.

$$\%Ca = \frac{40}{74} \times 100 = 54\% \qquad \%O = \frac{32}{74} \times 100 = 43\%$$

$$\%H = \frac{2}{74} \times 100 = 3\%$$

Check

- The percentages should add up to about 100%.

$$\%Ca = \frac{40}{74} \times 100 = 54\%$$

$$\%O = \frac{32}{74} \times 100 = 43\%$$

$$\%H = \frac{2}{74} \times 100 = 3\%$$

$$100\%$$

- The sum can vary due to rounding error.