Ch 12
Sec 12.3 **HW: Sec Asses 33-35 Rev Con 48,51,52,84**
obj: Calculate and identify theoretical, actual and percent yields.

Theoretical Yield

- The amount of a product that is determined by a stoichiometric calculation.

- The Theoretical yield represents the maximum amount of product the rxn can produce.

  * You calculate Theoretical yields

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Actual Yield

- The amount of product that is produced from the reaction.

- A measured amount of the product.

Percent Yield

- A ratio btw the actual & theoretical yield.

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$$\% \text{ Yield} = \frac{\text{Actual Yield}}{\text{Theoretical Yield}} \times 100$$

$$CaCO_3 \xrightarrow{\Delta} CaO + CO_2$$

What is the theoretical yield of CaO if 24.8g $CaCO_3$ is heated? What is the percent yield if 13.1 g of CaO is actually produced during the reaction?

Given

24.8g $CaCO_3$

13.1g CaO (Actual)

Want

Theor. Yield = ?

% Yield = ?

$$24.8\text{g } CaCO_3 \left| \frac{1\text{mol } CaCO_3}{100\text{g } CaCO_3} \right| \frac{1\text{mol } CaO}{1\text{mol } CaCO_3} \left| \frac{56\text{g } CaO}{1\text{mol } CaO} \right. = 13.9\text{g } CaO$$

$$\% \text{ Yield} = \frac{\text{Actual Yield}}{\text{Theoretical Yield}} \times 100$$

$$= \frac{13.1\text{g } CaO}{13.9\text{g } CaO} \times 100$$

$$= 94\%$$

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