

Ch 12

Sec 12.3 IIW: 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

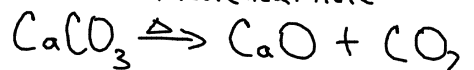
- The amount of product that is produced from the reaction.
- A measured amount of the product.

### Percent Yield

- A ratio btw the actual & theoretical yield.

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



What is the theoretical yield of CaO if 24.8g CaCO<sub>3</sub> is heated? What is the percent yield if 13.1 g of CaO is actually produced during the reaction?

Given	<del>24.8g CaCO<sub>3</sub></del>	<del>1mol CaCO<sub>3</sub></del>	<del>1mol CaO</del>	<del>56g CaO</del>
<del>24.8g CaCO<sub>3</sub></del>	<del>100g CaCO<sub>3</sub></del>	<del>1mol CaCO<sub>3</sub></del>	<del>1mol CaO</del>	<del>56g CaO</del>
<u>13.1g CaO (Actual)</u>				
Want	13.9g CaO			

Theor. Yield = ?  
% Yield = ?

$$\begin{aligned} \% \text{ Yield} &= \frac{\text{Actual Yield}}{\text{Theoretical Yield}} \times 100 \\ &= \frac{13.1\text{g CaO}}{13.9\text{g CaO}} \times 100 \\ &= 94\% \end{aligned}$$

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