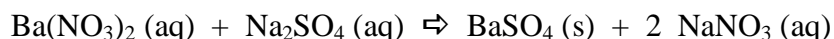


Pre-AP Chemistry I/Chemistry I  
Ms. Nichole A. DePaul

Unit #9—Stoichiometry  
Theoretical Yield, Actual Yield, and Percent Yield

$$\text{Percent Yield} = \frac{\text{Actual Yield}}{\text{Theoretical Yield}} * 100$$

Barium sulfate is made by the following reaction:



An experiment began with 75.0 grams of barium nitrate and an excess amount of sodium sulfate. After collecting and drying the barium sulfate, it had a mass of 64.45 grams. Calculate the theoretical yield for the reaction. Calculate the percent yield of the reaction in the laboratory setting.

$$75.0 \text{ g Ba}(\text{NO}_3)_2 \left| \frac{1 \text{ mol Ba}(\text{NO}_3)_2}{261.335 \text{ g Ba}(\text{NO}_3)_2} \right| \left| \frac{1 \text{ mol BaSO}_4}{1 \text{ mol Ba}(\text{NO}_3)_2} \right| \left| \frac{233.389 \text{ BaSO}_4}{1 \text{ mol BaSO}_4} \right| = 66.980 \text{ g BaSO}_4$$

$$\frac{64.45 \text{ g BaSO}_4}{66.980 \text{ g BaSO}_4} * 100 = 96.223\% \text{ yield of BaSO}_4$$