

Name \_\_\_\_\_

## Percent Yield and Stoichiometry (Limiting Reactants)

Percent Yield:

- 1) Determine the percent yield for a reaction between 5.23g sodium with excess oxygen if only 6.32g of the product are recovered.
- 2) Determine the percent yield for the reaction if 14.8g of sodium bromide reacts with excess chlorine gas and only 1.38L of bromine gas is collected at STP.
- 3) Determine the percent yield for the reaction if 9.82g of barium chloride reacts with excess sodium sulfate and only 4.68g of the solid product are collected.
- 4) Determine the percent yield for the reaction if 18.5g of  $\text{SO}_3$  is produced from the reaction with 10.5g sulfur with excess oxygen.
- 5) Determine the percent yield for the reaction if 1.32g of baking soda (sodium bicarbonate) is reacted with excess acetic acid, and only 328mL of  $\text{CO}_2$  gas is released at STP.
- 6) Determine the percent yield if 12.6g of copper (II) carbonate is decomposed into a metal oxide and a gas, and only 6.23g of the solid product is collected.
- 7) How many grams of carbon dioxide gas should you have produced from the burning of butane gas ( $\text{C}_4\text{H}_{10}$ ) if you received 1.86L of  $\text{CO}_2$  at STP, and the percent yield was determined to be 73.6%?

Limiting Reactants:

- 8) 6.32g of sodium sulfate is reacted with 12.03g of barium nitrate. How many grams of the precipitate would you expect to collect?
- 9) 42.3g of silver chloride is reacted with 5.94g of iron metal. How many grams of iron (III) chloride would be produced?
- 10) 3.88L of ammonia gas ( $\text{NH}_3$ ) at STP is reacted with 6.58g of oxygen gas. How many milliliters of condensed water from the gas produced should be collected?
- 11) Determine the percent yield if 45.2L of propane gas ( $\text{C}_3\text{H}_8$ ) is combusted with 219L of available oxygen gas and only 121.3L of  $\text{CO}_2$  is collected at STP.
- 12) Determine the percent yield for the reaction if 4.68g of  $\text{ZnS}$  and 2.92g of oxygen gas react and only 2.98g of  $\text{ZnO}$  is recovered along with an unknown quantity of sulfur dioxide.
- 13) Determine the percent yield if 14.3g of aluminum chloride is reacted with 12.6g of sodium hydroxide and only 7.68g of the solid product is collected.