

Name: \_\_\_\_\_

Blk: \_\_\_\_\_ Date: \_\_\_\_\_

**Chemistry 11  
STOICHIOMETRY  
AND PERCENT YIELD**

Sometimes 100% of the expected amount of products can not be obtained from a chemical reaction.

The term \_\_\_\_\_ is used to describe the amount of products that are actually obtained as a percentage of the expected amount.

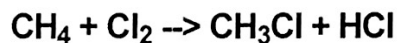
Reasons for less than 100% yield:

1. \_\_\_\_\_

2. \_\_\_\_\_

**PERCENT YIELD =**

**Example 1:** When 15.0 g of CH<sub>4</sub> is reacted with an excess of Cl<sub>2</sub> according to the reaction:



a total of 29.7 g of CH<sub>3</sub>Cl is formed. What is the percent yield of the reaction?

**Step 1:** Write out the balanced equation

**Step 2:** Write out the PERCENT YIELD FORMULA and identify what you are looking for

**Step 3:** Identify the ACTUAL amount produced:

**Step 4:** Calculate the EXPECTED amount using STOICHIOMETRY

**Step 5:** Plug the ACTUAL and EXPECTED into the formula

**Example 2: What mass of  $K_2CO_3$  is produced when 1.50 g of  $KO_2$  is reacted with an excess of  $CO_2$  according to the reaction:**



**If the reaction has a 76.0 % yield?**

**Step 1:** Write out the balanced equation

**Step 2:** Write out the PERCENT YIELD FORMULA and identify what you are looking for

**Step 3:** Calculate the EXPECTED amount using STOICHIOMETRY

**Step 4:** Now use the Percent Yield Formula + expected to solve for ACTUAL

**Example 3: What mass of  $CuO$  is required to make 10.0 g of  $Cu$  according to the reaction:**



**IF the reaction has a 58.0 % yield?**

**Step 1:** Write out the balanced equation

**Step 2:** Write out the PERCENT YIELD FORMULA and identify what you are looking for

**Step 3:** Re-arrange the FORMULA to solve for EXPECTED  $Cu$

**Step 4:** Use the Expected  $Cu$  to solve for the required amount of  $CuO$  (STOICH)

Ex: 35-37 pg 137