NAME: **HONORS CHEMISTRY**

SECTION: Percent Yield

Answer the following questions. Show all your work in the space provided. Use factor label and report your answer with an appropriate unit and the correct number of significant figures.

Percent yield formula:

1. Burning 5.75 grams of aluminum metal produces 9.36 g of solid product. What is the percent yield for this reaction?

 4 Al(s) + 3 O2(g) → 2 Al2O3(s)

1. When 3.4 g of solid potassium iodide are added to an aqueous solution of lead(II) nitrate, 2.6 g of a bright yellow precipitate are recovered. What is the percent yield for this reaction?

 2KI(s) + Pb(NO3)2(aq) → 2 KNO3(aq) + PbI2(s)

1. The Sabatier process produces methane and water from a reaction of hydrogen with carbon dioxide at elevated temperatures and pressures in the presence of a nickel catalyst. 91.20 g of hydrogen gas react with excess carbon dioxide. How many grams of methane can be expected if the percent yield for this reaction is 76.28%?

 CO2(g) + 4 H2(g) $→$ CH4(g) + 2 H2O(g)

1. Determine the actual yield of oxygen gas if 15 g of barium chlorate decomposeaccording to the chemical equation shown below. The percent yield of this reaction is 92%.

 Ba(ClO3)2(s) $→$ BaCl2(s) + 3 O2(g)

Answer key

1. 86.2% yield

2. 57% yield

3. 138.1 g

4. 4.4 g