

Name:

Period:

Date:

Reaction Stoichiometry and Percent Yield Lab

AKA "How to make Copper"

Pre-Laboratory Questions and Exercises

(Due before lab begins. Show work somewhere and place your answer in the space provided.)

1. What safety precautions are cited in this experiment?
2. During this lab we will be adding Aluminum to a solution of Copper (II) Sulfate & Hydrochloric Acid. When we do, will the Aluminum react with each chemical? If so, determine the balanced chemical equation(s) and write below.
3. A student combusted 0.500 g of purified aluminum powder with excess oxygen in an oxygen atmosphere according to the reaction, $4\text{Al}(s) + 3\text{O}_2(g) \rightarrow 2\text{Al}_2\text{O}_3(s)$
 - a) What is the limiting reactant? _____
 - b) How many moles of Al were used? _____ mol of Al
 - c) How many moles of Al_2O_3 would form, based on the moles of the limiting reactant? _____ mol of Al_2O_3
 - d) How many moles of O_2 are required to react completely with the aluminum? _____ mol of O_2
 - e) How many grams of O_2 are required to react completely with the aluminum? _____ g of O_2
 - f) What is the theoretical yield of Al_2O_3 in grams? _____ g of Al_2O_3
 - g) If the student collected 0.918 grams of Al_2O_3 product, _____ %
what was the percent yield of Al_2O_3 obtained?