Name:

**Limiting Reactants Assignment #1**

*No equations are balanced on this assignment.*

1. 2.50 moles of magnesium are burned in 3.60 moles of oxygen, according to:

Mg + O2 MgO

1. What is the limiting reactant?

b. What is the excess reactant? What is the excess amount in moles?

c. How much magnesium oxide (in moles) can be produced theoretically?

2. 9.36 moles of sodium are placed in 3.62 moles of water, according to:

Na + H2O NaOH + H2

1. What is the limiting reactant?

b. What is the excess reactant? What is the excess amount in moles?

c. How much hydrogen gas (in moles) can be produced theoretically?

d. If you actually do this experiment, and obtain 1.07 moles of hydrogen gas, what is your percent yield for the experiment?

3. 10.0 grams of copper sulfate are combined with 10.0 grams of aluminum.

CuSO4  + Al Al2(SO4)3 + Cu

a. What is the limiting reactant?

b. What is the excess reactant? What is the excess amount in grams?

c. What is the theoretical yield of copper in grams?

d. If you actually do this experiment, and obtain 1.55 grams of copper, what is your percent yield for the experiment?

4. 6.87 grams of potassium hydroxide are combined with 5.87 grams of aluminum chloride, as in the reaction:

KOH + AlCl3 Al(OH)3  + KCl

a. What is the limiting reactant?

b. What is the excess reactant? What is the excess amount in grams?

c. What is the theoretical yield of potassium chloride in grams?

d. If you actually do this experiment, and obtain 2.08 grams of potassium chloride, what is your percent yield for the experiment?