**Unit 6 Notes**

**Percent Yield**

Theoretical Yield – the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ amount in grams of a product that can be produced based on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is the number in grams that we have calculated in stoichiometry problems.

Actual Yield – The actual amount in grams of a product produced in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

during an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This amount must be measured in a lab.

Percent Yield – a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the actual yield to the theoretical yield. Tells us how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_an experiment was. The theoretical yield and actual yield should have units of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the same element or compound.

Formula: (Actual yield/theoretical yield) x 100

Examples:

1. In an experiment a student runs a reaction and ends up with 4.98 g of CaCl2.According to his calculations he should have produced 5.09 g CaCl2. What was his percent yield for this experiment?

2. When combusting methane gas in an experiment a student obtains an 87 % yield for the amount of water produced. If the student measured 23.2 grams of water during the lab what was his theoretical yield?

3. During an experiment students spilled some of their products and only obtained a 52% yield during their experiment. These students calculated that they should have produced 15.7 grams of AlBr3. What was the mass of AlBr3 measured during the experiment?

4. Consider the following reaction: 2NH4 🡪 4H2 + N2

If 3.8 grams of NH4 decomposes what is the theoretical yield of hydrogen gas that can be produced?

If this experiment is run in a lab and a student measures out an actual yield of .76 grams of hydrogen gas what is the % yield?

5. Aluminum Fluoride reacts with Barium Phosphate to form Aluminum Phosphate and Barium Fluoride. If 4.99 grams of Aluminum Fluoride react with 20.2 grams of Barium Phosphate, how many grams of Barium Fluoride can be produced?

A student runs this reaction and masses out 12.7g of Barium Phosphate. What is this student’s percent yield?