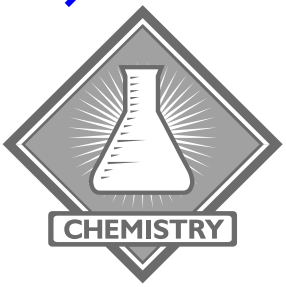
Name(s): _____ **15 Pts.**

Chemistry Lab: Mole Relationships



I. Purpose:

To Compare the experimental mass of a product of a chemical reaction with the mass predicted for that product by calculation.

II. Procedure:

1. See Lab 16

III. Analysis:

Data and Calculations: ***Show calculation with correct sig figs and units in the table**.

Mass of evaporating dish and watch glass:	
Mass of dish, cover and $NaHCO_3$:	
*Mass of $NaHCO_3$:	
*Moles of $NaHCO_3$ reacted:	
Mass of dish, cover and NaCl (end of experiment):	
*Mass of NaCl	
*Moles of NaCl produced:	

IV. Conclusion Questions:

1. Write a balanced equation for the reaction of $NaHCO_3$ with HCl. Include phase notation and state the $NaHCO_3$ to NaCl mole ratio.

2. What is the mole ratio of the $NaHCO_3$ reactant to NaCl product? (Show calculations)

3. Calculate the theoretical yield of NaCl that should be produced from the mass of $NaHCO_3$ that you reacted.

4. Determine your percent yield:

$$\text{Percent Yield} = \frac{\text{Actual Yield (what you made in lab)}}{\text{Theoretical Yield (What you calculate)}} \text{x100} =$$

5. Based on the equation for the reaction of $NaHCO_3$ with HCl …
   a.) what mass of HCl was needed to react with <u>your</u> mass of $NaHCO_3$?

   b.) Determine the mass of CO_2 <u>and</u> H_2O that was also produced.