The Salt Lab

Purpose: Make 3.0 grams of salt Safety; WEAR GOGGLES AT ALL TIMES

Materials: sodium carbonate monohydrate, hydrochloric acid(3M), balance, graduated cylinder, ring stand, ring, wire gauze, burner, evaporating dish, watch glass.

Procedure: There are three basic steps in stoichiometry problems.

1. **Convert to moles**

2. **Use the mole ratio between what you have and what you want**. "What you want" goes on top of the ratio. (in order to find a mole ratio, you must have a balanced equation.)

3. **Convert to the unit you are looking for.....**

Write the equation for the reaction of sodium carbonate with HCl. NOTE. H_2CO_3 will decompose into H_2O and CO_2

SHOW WORK TO ANSWER THE QUESTIONS BELOW.

STEP ONE: How many moles are in 3 grams of sodium chloride? _____

STEP TWO: Start with the number of moles of sodium chloride and decide how many moles of sodium carbonate will be needed. _____

STEP THREE: Decide how many grams of sodium carbonate monohydrate will be needed. ($Na_2CO_3 \bullet H_2O$) There is one molecule of water per formula unit. _____

Collect DATA, and see if the process worked.

Find the mass of an evaporating dish and watch glass 97.35 grams

Put in the correct number of grams of sodium carbonate monohydrate.

Get acid from Mr. Howe

ADD THE ACID SLOWLY WHILE HOLDING THE WATCH GLASS OVER THE DISH TO PREVENT SPILLAGE

Use bunsen burner, ring stand and gauze to evaporate the solvent (water and a little excess acid)

AFTER COOLING, find the mass of the dish, watch glass, and salt. 100.28 grams

NOW.....Find the mass of salt produced..... _____

You should have had 3 grams of salt. Calculate your percent yield. PERCENT YIELD IS FOUND BY DIVIDING WHAT YOU GOT BY WHAT YOU SHOULD HAVE GOTTEN AND MULTIPLYING BY 100. _____

In the space below, explain in detail what you did in the math, steps 1,2, and 3