

Prelab Questions:

- How many moles are there in 456 grams of CaF_2 ?
- What is the formula for:
 - Sodium carbonate _____
 - Calcium chloride _____
 - Calcium carbonate _____
 - Sodium chloride _____
- What is the purpose of removing all the precipitate from the inside of the beaker?

- In the procedure there are several washings of the solid with water. What is the purpose of these washings?

- Why is it important to that the solid be dry before the final mass measurement?

- The Molarity (M) is the moles/L of the chemical in solution. If you have 85.0mL of a .35 M solution, how many moles do you have? **Show work**

Data & Observations:

Volume of Sodium Carbonate _____ ml in _____ L

Volume of Calcium Chloride _____ ml in _____ L

Describe what happens after mixing the solution: _____

Mass of dry filter paper _____ g

Mass of filter paper + dry solid _____ g

Conclusions:

- Write a balanced chemical equation for the reaction that you did in this experiment.

2. Calculate the following: **SHOW ALL YOUR WORK!!!**

a) Moles of Sodium Carbonate used. (Moles/L) x (Liters) _____ mol

b) Moles of Calcium Chloride used. (Molarity x Volume in Liters) _____ mol

c) Calculate the mass of Calcium Carbonate produced (experimental yield). _____ g

d) Calculate the moles of Calcium Carbonate produced (experimental yield). _____ mol

3) Using your moles of **calcium chloride from 2b** calculate the mass of calcium carbonate that should have formed (theoretical yield)

_____ g

4) Calculate the % yield for your reaction (Experimental yield/ Theoretical yield) x 100 = % yield)

_____ %

5) Is your number to high or too low? Explain why you had this error occurred.

6) Calculate the mass of sodium chloride that formed from the moles of calcium chloride used (answer 2b)

_____ g

7) The value from the above problem represents the sodium chloride that is dissolved in the solution that came through the filter. How could you check to see how accurate that answer is?

8) Predict what would happen to the % yield (greater, no change, or less than) if the following occurred:

a) The solid was not completely dry

b) The balance measured all values over by 0.12g

c) You mixed up the volumes of the two liquids
