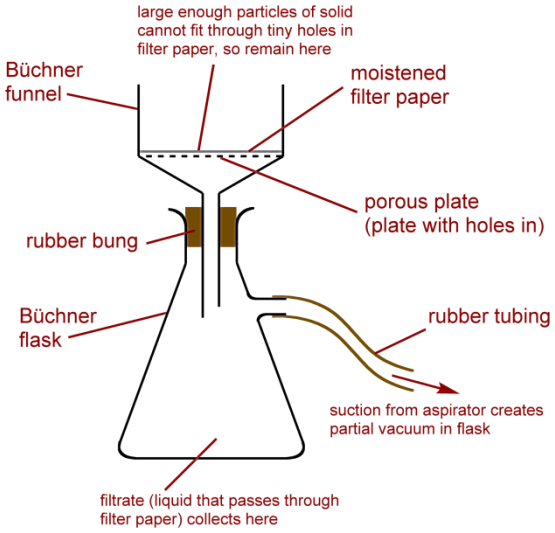
Solutions Lab: Gravimetric Analysis Lab; SC7a, SC2b

Problem: You are to react approximately 100 mL of 0.15 M calcium chloride with 85 mL or 0.10 M sodium carbonate. The reaction forms a precipitate, which you will collect via filtration. The purpose of this lab is to experimentally determine an indicator of a chemical reaction and to also apply the concept of stoichiometry to solutions.



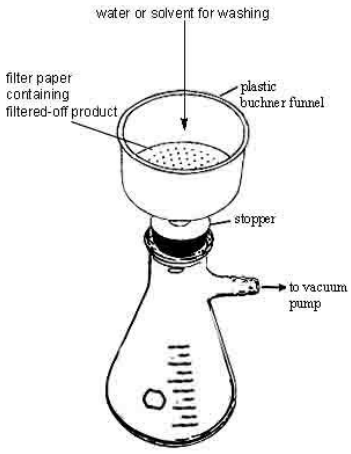
1. Write the balanced chemical equation for the reaction above
2. Determine which product is the precipitate and label all states of matter in your chemical equation
3. Pour both solutions into the flask.
4. Mass the dry filter paper.
5. Vacuum filtrate the precipitate. This may take several successive filtrations to get all of the precipitate.
6. Dry all filter papers and record the mass
7. Subtract out the mass of the filter papers to determine the mass of the ppt.
8. While the filtration is going on, perform the following calculation:
   - Use the molarities and the volumes to determine the mass of ppt that will form.

Data Table

Volume of calcium chloride	
Volume of sodium carbonate	
Molarity of calcium chloride	
Molarity of sodium carbonate	
Mass of filter paper 1	
Mass of filter paper 1 after drying with the ppt.	
Mass of ppt (from filter paper #1)	
Mass of filter paper 2	
Mass of filter paper 2 after drying with the ppt.	
Mass of ppt (from filter paper #2)	
Total mass of the ppt	
Expected mass of the ppt (from calculations)	
Percent Yield	

Procedure

You will need to both explain your procedure and draw pictures that illustrate how you performed this experiment



Calculations

Show all necessary calculations and chemical equations that show how you predicted the amount of ppt that was formed. Also show the percentage yield for the precipitate.

Post Lab Questions *(answer in complete sentences)*

1. Comment on why your percentage yield is not 100%. If the number is greater than 100%, then explain why it is greater. If the number is less than 100%, then explain why it is less.

2. Give two ways how you could have done this experiment better. (Be very specific)