Name: _____ **15 Pts.**

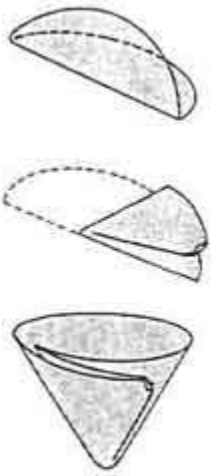
Honors Chemistry Lab: Analysis of a Mixture

I. Purpose:

To determine the amount of zinc acetate in a mixture of zinc acetate and sodium chloride.
Compare measurements of mass and moles to determine ratios of each.

II. Procedure:

1. Measure 2 grams of the $Zn(C_2H_3O_2)_2 \cdot 2H_2O$/ NaCl mixture onto a piece of weighing paper. Record this mass to the 0.01 place.
2. Place the $Zn(C_2H_3O_2)_2 \cdot 2H_2O$/ NaCl mixture in a clean 250-ml beaker and add 50 ml of water. Stir thoroughly to make sure that all crystals are dissolved. Use a small amount of water to rinse off the stirring rod into your solution.
3. Add 10 ml 0f a 0.5M of sodium phosphate solution into the 250-ml beaker containing the $Zn(C_2H_3O_2)_2 \cdot 2H_2O$/ NaCl mixture. Stir for several minutes and record your observations.
4. Obtain a piece of filter paper and record your groups name *in pencil* on the filer paper. Record the mass of the filter paper.
5. Set up a gravity filtration apparatus. Fold the filter paper and place it into a funnel. Moisten filter paper with water.
6. Pour the mixture from the 250-ml beaker into the funnel *slowly*. Never allow the solution to rise above the level of the filter paper in the funnel.
7. Rinse the 250-ml beaker with 20 ml of water. Pour the rinse water through the filter. Repeat the rinsing until all of the precipitate is out of the of the beaker.
8. Wash the precipitate on the filter with 10 ml of clean water.
9. Remove the filter paper and precipitate from the funnel and place in a 50-ml beaker. Place in a drying oven (set at 45ºC) overnight.
10. Wash all equipment and return.
11. (Next day) Find the dry mass of the precipitate.



III. Analysis:

Observations and Data:

Mass of $Zn(C_2H_3O_2)_2 \cdot 2H_2O$ -- NaCl mixture	
Observations of mixing the two solutions together:	
Mass of filter paper:	
Mass of filter paper and dry precipitate (day 2)	
Mass of precipitate. (Show Work)	

IV. Calculations: Show all Calculations with proper sig figs.

1. Write a balanced equation that includes phase notation for the reaction that produced a precipitate.

2. Calculate the mass of reactant that was in the original mixture.

3. What is the percentage of each substance (zinc acetate and sodium chloride) in the original mixture?

V. Conclusion Questions:

1. If the original mixture contained sodium chloride and ammonium sulfate (both white, crystalline salts) how would the amount of precipitate formed after adding a solution of sodium phosphate compare to the amount that you actually produced? Explain.

2. What error would be introduced if you did not rinse the precipitate in step 8.?

3. How many grams of sodium phosphate were used to precipitate all of the reactant?