

### Lab #3: Percent Hydrate

**Purpose:** to identify an unknown hydrate

**Pre-lab Questions:**

1. Calculate the percent hydrate in a)  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  b)  $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$

**Instructions:**

1. Determine the mass of a clean evaporating dish.
2. Add approximately 1.00 g of the unknown hydrate and record its mass.
3. Gently and evenly heat the hydrate until all of the water has been removed. The product should be pale blue. Be careful not to overheat!
4. Mass the evaporating dish with the anhydrate and record.
5. Gently heat the compound again for another minute and re-mass. If the mass has not changed, you are done. If it is lower, repeat.

**Observations:** organize and record your data

**Post-lab Calculations and Questions:**

1. Calculate the percent water of the unknown hydrate.
2. Identify your unknown hydrate. Justify.
3. Calculate your percent error.
4. If you did not remove all of the water, what impact would this have had on your recorded values? On your % water?
5. A) Create an equation of the reaction that might occur if you were to overheat the hydrated compound.  
b) What impact would overheating have on your % water?
6. What did your group do, under heat or overheat? Justify your answer.