

Name(s): \_\_\_\_\_

15 Pts.

### Honors Chemistry Lab: Hydrated Crystals

I. **Purpose:** Heat a specific amount of copper(II) sulfate to remove the water. Determine percentage of water in hydrate and predict its empirical formula

II. **Procedure:**

1. Clean and dry until red hot a crucible and cover over a laboratory burner on a clay triangle.
2. When cool measure 3.00g of the copper(II)sulfate hydrate into your crucible. Begin heating slowly. Increase heat until you have heated strongly for about 10 minutes. Cool in a desiccator and measure its mass.
3. Reheat with a hot flame for a few minutes, cool, and measure mass again. If masses differ reheat again until a constant mass is obtained.

III. **Analysis:**

**Data Table** \*Show calculation for this in space provided:

Mass of crucible + cover	
Mass of crucible, cover + hydrated salt	
*Mass of hydrated salt	
Mass of crucible, cover, anhydrous salt	
*Mass of anhydrous salt	
*Mass of water in hydrate	
*Moles of anhydrous salt	
*Moles of H <sub>2</sub> O in hydrate	
*Percentage of salt in hydrate	
*Percentage of water in hydrate	

IV. **Conclusion Questions:**

1. Compare the moles of anhydrous copper(II) sulfate to moles of water. Use the *ratio* of these two values to predict the formula of the hydrated salt.
2. Find the theoretical percentage of water in the copper(II) sulfate hydrate from your teacher and determine your percentage of error.