

Name: _____

Lab # _____

Lab: Percent Composition of Water in a Hydrate

Aim:

Diagram:

Vocabulary: (Source: _____)

- Hydrate
- Percent Error:
- Percent Composition:
- Formula Mass
- Anhydrous

Materials:

- Copper (II) sulfate: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
- Crucible
- Weighing Boat
- Electronic Balance
- Bunsen Burner
- Clay Triangle
- Support Stand & Ring Clamp
- Spatula
- Goggles

Method:

1. Record the mass of an empty crucible.
2. Place a small amount (about 3g) of copper(II) sulfate hydrate in crucible and record mass.
3. Record observations
4. Heat sample in crucible until a change is noticed – use the spatula to break up the sample as it heats.
5. Mass now dried sample in crucible
6. Repeat steps 4 & 5.
7. Record all data in data table

Data:

	Before Heating (Hydrate)	After Heating (Anhydrous)	Difference (Water)
Observations			
Mass of Sample & Crucible		1 st : 2 nd :	
Mass of Crucible			
Mass of Sample		After 2 nd heating:	

Calculations:

1. Percent composition of water in Copper (II) sulfate (experimental, measured).
2. Percent composition of water in Copper (II) sulfate (theoretical using formula, actual)
3. Percent error.

Questions:

1. Describe the two ways you determined percent composition of water in copper (II) sulfate.
2. Why did the color of the hydrate change when it was heated?
3. Why did the mass of the hydrate change when it was heated?
4. What effect did adding water to the anhydrous copper (II) sulfate have in terms of color and temperature?

Conclusion: