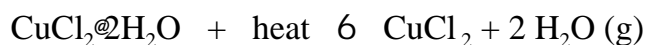


Water of Hydration of a Compound

INTRODUCTION

Many simple compounds contain water of crystallization. For example, copper (II) chloride is a dihydrate and is represented by the formula: $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$. This means for each 1 unit of CuCl_2 there are 2 units of H_2O present which will be lost when heated:



The amount of water of hydration present in a compound can be determined by heating a specific amount of the compound, weighing it before and after heating. For this to be accurate, the compound must lose all the water and it must be stable at high temperatures. In this experiment, you will heat a copper compound and determine its % of water content.

EXPERIMENTAL

*note: use the same balance for all mass measurements
record masses in the data section on the back page*

1. Assemble a tripod and place a triangle or wire gauze on the tripod.
2. Record the mass of the empty evaporating dish (data mass #1).
3. Weigh out approx. 1.0 g of the copper compound into the dish, and record the mass of the dish plus the compound (data mass #2).
4. Heat the dish and unknown *gently* with a Bunsen burner for about 5 minutes. The pale blue color of the compound should change to a whitish grey color.
5. Cool for several minutes to room temperature.
6. Weigh the dish plus dehydrated unknown and record the mass (data mass #4)
7. Place the residue in the recycle beaker. Clean the dish with water.

DATA

1. Mass of empty dish = _____

2. Mass of dish plus compound before heating = _____

3. Mass of compound before heating (2-1) = _____

4. Mass of dish plus compound after heating = _____

5. Mass of water lost during heating (2-4) = _____

CALCULATIONS

Calculate the % water lost from the unknown compound. Show calculation below:

