

Formula of a Hydrate

Pre-lab Questions

1. A hydrated MgSO_4 salt, weighing 3.211 g, is heated in a crucible until reaching a constant weight. The weight of the anhydrous MgSO_4 is 1.570 grams.

a) Calculate the percent of water in the hydrated MgSO_4 salt.

_____ % H_2O

b) Calculate the moles of H_2O removed and the moles of anhydrous MgSO_4 remaining in the crucible.

_____ mol H_2O
_____ mol MgSO_4

c) What is the formula for the hydrated MgSO_4 ? _____

2. Anhydrous CaCl_2 is used as a desiccant in desiccators, i.e. it removes water from the air within the desiccator and forms a hydrated salt. A 16.43 g mass of anhydrous CaCl_2 weighed 21.75 grams after being left in a desiccator for several months. What is the formula of the hydrated CaCl_2 salt?

$\text{CaCl}_2 \cdot ___ \text{H}_2\text{O}$

3. In today's experiment what error in the data is likely to occur if the hydrated salt is heated too strongly?

4. How long should the hydrated salt be heated in removing the water?