

Analyze and Conclude

1. Using Numbers Use your experimental data to calculate the formula for hydrated MgSO_4 .

2. Observing and Inferring How did your observations of the hydrated MgSO_4 crystals compare with those of the anhydrous MgSO_4 crystals?

3. Drawing Conclusions Why might the method used in this experiment not be suitable for determining the water of hydration for all hydrates?

4. Error Analysis What is the percent error of your calculation of the water of hydration for MgSO_4 if the formula for the hydrate is $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$? What changes would you make in the procedure to reduce error?

5. Predicting What might you observe if the anhydrous crystals were left uncovered overnight?

Real-World Chemistry

1. Packets of the anhydrous form of a hydrate are sometimes used to keep cellars from being damp. Is there a limit to how long a packet could be used?

2. Gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) is a mineral used for making wallboard for construction. The mineral is stripped of three-quarters of its water of hydration in a process called calcining. Then, after mixing with water, it hardens to a white substance called plaster of paris. Infer what happens as calcined gypsum becomes plaster of paris.