

Name _____ Class _____ Date _____

MINI LAB: Percent Composition

LABORATORY RECORD SHEET

Use with SECTION 7.3



PURPOSE

To measure the percent of water in a series of crystalline compounds called hydrates.

MATERIALS

- centigram balance
- 3 medium-sized test tubes
- test tube rack
- hydrated salts of copper(II) sulfate, calcium chloride, and sodium sulfate
- burner
- test tube holder
- spatula

PROCEDURE

1. Label each test tube with the name of a salt. Weigh and record its mass.
2. Add 2–3 g of salt (a good-sized spatula full) to the appropriately labeled test tube. Weigh and record the mass of each test tube plus the salt.
3. Hold one of the tubes at a 45° angle and gently heat its contents over the burner, slowly passing it in and out of the flame. Note any change in the appearance of the solid salt.
4. As moisture begins to condense in the upper part of the test tube, gently heat the entire length of the tube. Continue heating until all of the moisture is driven from the tube. This may take 2–3 minutes. Repeat Steps 3 and 4 for the other two tubes.
5. Allow each tube to cool. Then weigh and record the mass of each test tube and the heated salt.

ANALYSIS AND CONCLUSIONS

1. Set up a data table so you can subtract the mass of the empty tube from the mass of the salt and the test tube, both before and after heating.

Name _____ Class _____ Date _____

2. Calculate the difference between the mass of each salt before and after heating. This difference represents the amount of water lost by the hydrate on heating.

3. Calculate the mass percent of water lost by each compound.

4. Which compound lost the greatest percent by mass of water? The least?
