Name: Class:

Experiment worksheet

4.7 Atoms bond together to make molecules and compounds

Experiment 4.7: Decomposing copper carbonate

Pages 74–75 and 188

Aim

To decompose (break into smaller parts) copper carbonate.

Materials

- Plastic beaker
- Test tube or crucible
- Electronic balance
- Spatula
- Copper carbonate
- Bunsen burner and heating mat
- Tripod stand
- Matches
- Wooden tongs
- Paper towel

Safety

CAUTION! WEAR SAFETY GLASSES AND LAB COAT, AND TIE LONG HAIR BACK, WHEN USING A BUNSEN BURNER.

- Use a yellow (cooler) safety flame for this experiment.
- Hold the test tube or crucible securely with the tongs and always point it away from yourself and others.
- Never place hot objects on the balance.

Method

1 Place a plastic beaker containing the test tube on the balance. Tare the balance so it reads zero.

2 Using a spatula, add approximately 3 grams of copper carbonate into the test tube. Record the mass in grams (this is W1).

3 Set the Bunsen burner up on the heating mat. Light the flame, ensuring the hole is closed and a yellow (safety) flame is burning.

4 Using the wooden tongs to hold the top of the test tube, gently wave the base of the test tube over the flame twice. Record any changes. Continue to do this for 2 minutes, recording any changes. Be very careful to point the open end of the test tube away from others and yourself.

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5 Allow the test tube and copper carbonate to cool. Wipe any black powder from the outside of the tube off with paper towel.

6 Place the test tube in the original plastic beaker. Reweigh the test tube and beaker and record the mass in grams (this is W2). Note any change in weight.

Results

Record your results in Table 1.

TABLE 1

WEIGHT OF COPPER CARBONATE BEFORE HEATING (W1) (G)	WEIGHT OF COPPER CARBONATE AFTER HEATING (W2) (G)	DIFFERENCE W1-W2 (G)

Discussion

1 What happened to the copper carbonate? Consider the colour and any change in mass.

2 What evidence is there that copper carbonate is a compound and not an element?

3 What are the possible sources of error in this experiment?

Conclusion

What happens when copper carbonate decomposes?

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