

Melting Mothballs

Summary

Students will melt then freeze para-dichlorobeneze (found in mothballs, do not use mothballs).

Time Frame

2 class periods of 45 minutes each

Group Size

Small Groups

Materials

- test tube with mothballs (p-dichlorobenzene)
- thermometer or CBL
- ring stand
- ring and screen
- clamp
- beakers
- alcohol burners
- goggles
- [student sheet](#)
(attached)

Instructional Procedures

Add about 3 cm of granulated p- dichlorobeneze to a test tube for each group. Set up other materials as you usually do.

Go over instructions with students. Emphasize not using the thermometer as a stirring rod. Once the substance hardens, it will break the end off a glass thermometer if wriggled.

Once the graph is made, ask students to identify the melting and freezing points. They will be slightly flattened areas next the highest point on the graph. If you have boiled water and graphed it, the students may already expect to see the flat areas.

The melting and freezing points should be the same temperature. It is more difficult to get the melting point because it may melt too rapidly but the freezing point will be clear if enough time is spent allowing it to cool.

Assessment Plan

Scoring / Answers to analysis

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What did the melting point look like on your graph? A flat spot

When were both solid and liquid mothball present in the test tube? During melting and boiling

What was the melting point for mothballs? What was the freezing point? About 53 degrees C

What is the difference between melting and freezing point? Melting is going from solid to liquid, freezing is going from liquid to solid.

When does the temperature start to rise when you are melting something? When the solid is gone.

Why is melting point a physical change? It is easy to reverse, no new substances are formed.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)