

Honors Chemistry Lab

Heating Curves

Purpose

To observe the temperature of a substance as it undergoes a change.

Prelab Questions

- 1) How does heat differ from temperature?
- 2) What is latent heat?
- 3) How do molecules behave if heat is added to them?

Procedure

- 1) Find the mass of an empty beaker.
- 2) Fill with crushed ice or 3–4 ice cubes.
- 3) Find the mass of the beaker with the ice.
- 4) Calculate the mass of ice being used.
- 5) Place the beaker on a hot plate, set the hot plate to about 75% power.
- 6) Record the temperature of the ice.
- 7) Record the temperature of the H₂O every 30 seconds until told to stop.
- 8) Note the time and temperature when all of the ice has finally melted.
- 9) Note the time and temperature when the water begins to boil.

Analysis:

You will write a formal lab report for this experiment.

Graph your data and bring it to class tomorrow. On your graph, indicate the times and temperatures for steps (8) and (9) above.

Post Lab Questions:

Look at the graphs of your classmates.

- 1) Do (All, Most, Some, None) of the graphs have a plateau?
- 2) Of the graphs with plateaus, do the plateaus all occur at about the same time? (Look at the start, middle, and end and length of the plateau)
- 3) Do the plateaus occur at about the same temperature(s)?
- 4) Did the amount of H₂O make a difference in the location(look at time and temperature coordinates) of the plateau? Explain.