

Name _____

Date _____

Due Date _____

Mark _____/10

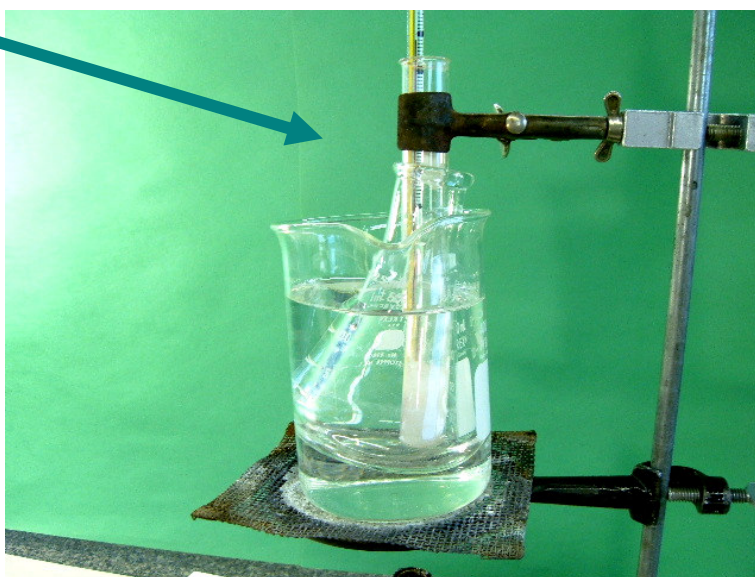
Correct and Hand in Again by _____

Chemistry 11

Experiment 2A-Warming Behavior of Solid Paradichlorobenzene

Purpose: To observe what happens when solid paradichlorobenzene is warmed to about 70°C**Procedure:**

1. Get a 400 or 600 mL beaker and fill it about ½ full of warm tap water. Put it on a ring stand and use a bunsen burner to bring it to a gentle boil.
2. Get a test tube with paradichlorobenzene and REMOVE the stopper. Gently warm the test tube on a flame until the paradichlorobenzene is almost all melted. Insert a thermometer and cool it under the tap until the paradichlorobenzene is solid and the temperature goes to below 30°C.
3. Turn off the bunsen burner. Get a small Erlenmeyer flask, insert it into the beaker of hot water. Put the test-tube with the paradichlorobenzene and thermometer in the flask and clamp the equipment together.
4. Use the table on the next page to record the temperature every ½ minute. From time to time you may have to start the bunsen burner to keep the water gently boiling.
5. Keep recording the temperature until the temperature is above 70°C. At this point remove the thermometer and wipe it with paper towel. Let your equipment cool before putting it away.



Data Table:

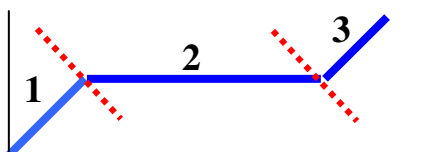
Time (min)	Temperature °C	Time (min)	Temperature °C	Time (min)	Temperature °C
0		6.5		13.0	
0.5		7.0		13.5	
1.0		7.5		14.0	
1.5		8.0		14.5	
2.0		8.5		15.0	
2.5		9.0		15.5	
3.0		9.5		16.0	
3.5		10.0		16.5	
4.0		10.5		17.0	
4.5		11.0		17.5	
5.0		11.5		18.0	
5.5		12.0		18.5	
6.0		12.5		19.0	

Graph:

Use the hand-out provided to produce a graph of Temperature vs. Time. Print a graph for each person in your group. Staple the graphs to the back of this lab report. Use the graph to help you answer the questions below.

Questions:

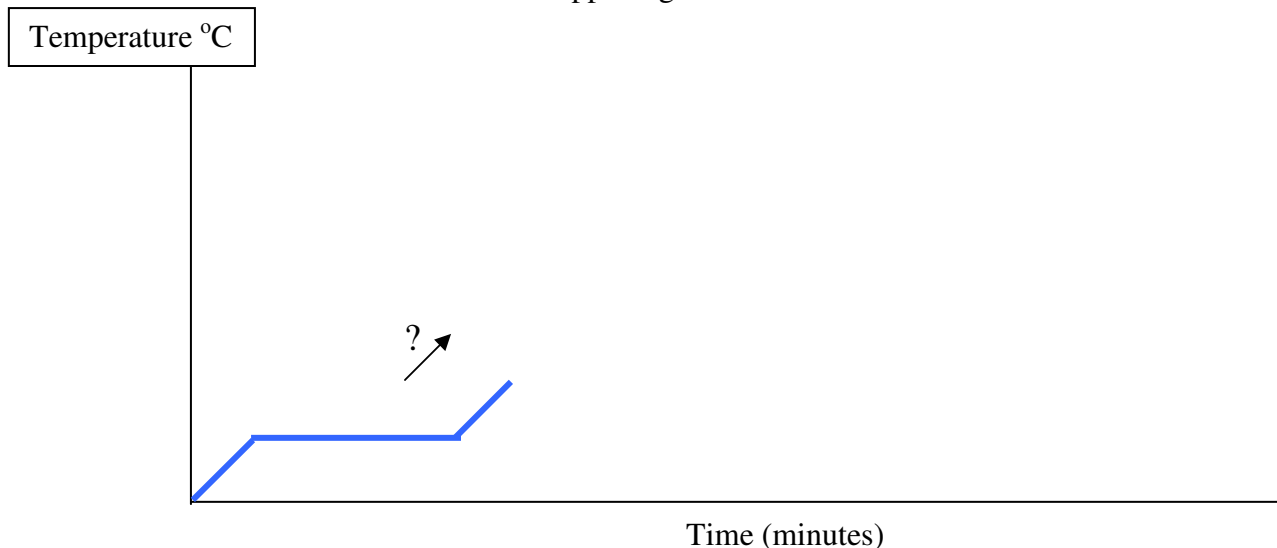
1. Divide your graph into 3 main sections. Label them as section 1, 2 and 3. Use positions where slope makes a rapid change as your dividing lines:



2. During section 1, all of the added heat is being used to _____
 _____ of the _____
3. During section 2, all of the heat is being used to _____
 _____ and none is available to
 _____.
4. During section 3, all of the added heat is being used to _____
 _____ of the _____
5. Use YOUR GRAPH to estimate the melting point of solid paradichlorobenzene. Show how you did this on your graph.

Answer: Melting Point = _____ °C

6. Predict what the graph would be like if you kept on heating the liquid paradichlorobenzene well past it's melting point. Draw your prediction on the following graph and label each section to indicate what is happening.



7. If you used a greater **amount** of paradichlorobenzene in the test tube, would the melting point (melting temperature) change? _____ How would the graph be different?