Sadf\

 

LAB REPORT

Freezing Lab

Sad

1. Write the name of the substance we will melt today \_\_\_\_\_\_\_\_\_\_.
2. Prediction: Circle how you think the temperature will change as we let the hot liquid cool off and turn into a solid:

This? This? This? This? Or draw your own!



1. Temperature and time are [circle one](inversely\* / directly \* ) related.

[\**Inversely* means, when one grows the other shrinks. *Directly* means, when one grows, the other grows.]

1. In a boiling water bath, clamp your stearic acid + thermometer + test tube. Keep the Bunsen Burner going until the Stearic Acid reaches 75°C and is transparent..
2. Turn off the burner. Ask the teacher to help you lower your water bath.. Leave the tube in its clamp, cooling in the air.
3. In the table below, record the temperature of the stearic acid every 20 seconds in this table until it reaches 45°C.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Seconds | Temp (°C) |  | Seconds | Temp (°C) |  | Seconds | Temp (°C) |  | Seconds | Temp (°C) |  | Seconds | Temp (°C) |
| 0 |  |  | 200 |  |  | 400 |  |  | 600 |  |  | 800 |  |
| 20 |  |  | 220 |  |  | 420 |  |  | 620 |  |  | 820 |  |
| 40 |  |  | 240 |  |  | 440 |  |  | 640 |  |  | 840 |  |
| 60 |  |  | 260 |  |  | 460 |  |  | 660 |  |  | 860 |  |
| 80 |  |  | 280 |  |  | 480 |  |  | 680 |  |  | 880 |  |
| 100 |  |  | 300 |  |  | 500 |  |  | 700 |  |  | 900 |  |
| 120 |  |  | 320 |  |  | 520 |  |  | 720 |  |  | 920 |  |
| 140 |  |  | 340 |  |  | 540 |  |  | 740 |  |  | 940 |  |
| 160 |  |  | 360 |  |  | 560 |  |  | 760 |  |  | 960 |  |
| 180 |  |  | 380 |  |  | 580 |  |  | 780 |  |  | 980 |  |

1. Estimate what the freezing point is of your substance\_\_\_\_\_\_\_\_\_\_\_\_\_°C
2. What is the melting point of your substance?\_\_\_\_\_\_\_\_\_\_\_\_\_ °C
3. From the book at the front of the room, obtain the accepted melting point of STEARIC ACID. Record it here:\_\_\_\_\_\_\_\_
4. Is your answer in #11 too low or too high?

**Homework: Graph your data from the front side. For full credit, each data point should be either an X or a dot with a square around it. The numbers on your axes should be written clearly. Your scale should spread the data out so it is not scrunched up.**

|  |  |
| --- | --- |
|  TEMPERATURE (°C) |    |
|  |   TIME (SECONDS) |
|  |  |

1. Based on your *cooling* graph, draw below a crude guess for the shape of a graph for *heating* stearic acid from 45°C to 75°C.