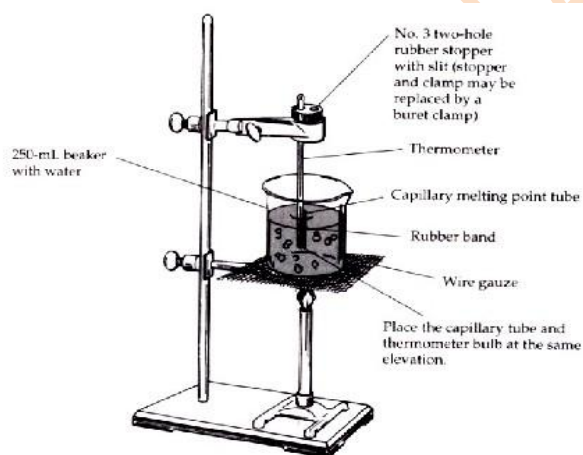


Experiment-1

Aim - To determine the melting point of given solid substance.

Requirements – Given Solid Substance, Capillary Tube, Paraffin, Laboratory thermometer.

Theory- The change from solid to liquid state of a compound in heating is called melting and the temperature at which a solid in its pure form melts is called the melting point. Every pure solid has a characteristic melting point therefore determination of melting point helps in identification of the compound. Presence of impurities lowers the melting point of the solid. Thus Melting point also serves as a criterion of purity of a compound.



▲ FIGURE 2.3 Apparatus for melting-point determination.

Procedure-

1. Take a fine capillary of length 5-6cm. seal its one end by inserting the end of the capillary tube horizontally into the extreme edge of a small steady Bunsen flame for a few seconds, rotating the capillary meanwhile.
2. Take a small quantity of the compound whose melting point is to be determined on a porous plate and powder it with a spatula.
3. Introduce the powdered compound in the capillary tube by introducing the open end of the capillary tube into the powdered compound and gently rotating it. Gently tap the capillary tube against the porous plate so that the compound sinks

into the closed end. Repeat the procedure of introducing and tapping three to four times.

4. Moisten the bulb of thermometer with Conc. Sulphuric acid or liquid paraffin and attach the capillary to the lower end of the thermometer.

5. Place the thermometer with the capillary tube in the melting point apparatus containing at least two third of its volume liquid paraffin in such a way that the closed end of the capillary remains below the surface of Liquid paraffin.

6. Now heat the beaker gently and note down the temperature from time to time and finally note down the temperature at which the compound starts melting and completely melts.

7. Repeat the experiment with a new capillary tube and fresh quantity of the substance.

Observations-

Melting point

1^oC

2^oC

3.....^oC

Mean Melting point = $(t_1+t_2+t_3)/3$ ^oC

Precaution-

1. The capillary tube is filled one third of its length.

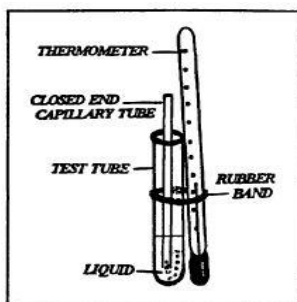
2. The rate of heating should be controlled. It should be very slow near the melting point so that the melting point can be recorded accurately.

Experiment-2

Aim- To determine the boiling point of the given organic compound.

Requirements- Liquid paraffin, given organic compound, Beaker, thermometer.

Theory- The boiling point of a compound is the temperature at which it changes from liquid to a gas. The boiling point of a liquid is the temperature at which its vapour pressure becomes equal to atmospheric pressure. It is the property often used to check the purity of the given compound.



Test Tube Assembly ↑

Procedure-

1. Take a small amount of liquid in an ignition tube and place a capillary tube sealed at one of its end in an inverted position in the same ignition tube.
2. Attach the ignition tube with the thermometer by means of a rubber band in such a way that the lower end of the ignition tube always remains in contact with the bulb of the thermometer.
3. Introduce whole of the arrangement into the beaker or boiling tube containing liquid paraffin in such a way that bulb of the thermometer dips in the liquid.
4. Heat the beaker gently with constant stirring until a stream of bubble gas goes outside the capillary tube rapidly. Note down the temperature.

Precaution-

1. Capillary tube must be sealed at one end.
2. Capillary must be placed in an inverted position.
3. Heating should be slow and uniform.

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