

CLASS IX PRACTICALS FOR SUMMATIVE ASSESSMENT SA-1

Experiment 8. To determine the melting point of ice and the boiling point of water.

(a) Melting Point

Materials Required : Crushed ice, 250 ml beaker, thermometer (-10°C to 100°C), Iron stand, burner and glass rod.

Procedure :

- Take some ice cubes and dry them using a filter paper and quickly put them in a beaker.
- Place the beaker over a wire gauze kept over a tripod stand.
- Suspend a thermometer (temperature range -10 to 110°C) with the help of a clamp stand so that its bulb remains in the middle of the ice cubes.
- Ice cubes are moderately heated by a gas burner and stirred continuously using a glass rod.
- Note the temperature (t_1) when the ice starts melting.
- Continue heating the ice.
- Note the temperature (t_2) when the ice has melted completely.
- Record your observations in tabular form.

Observation table

S.No	Starts melting (t_1)	completely melted (t_2)
(1)	0°C	0°C
2)	0°C	0°C
(3)	0°C	0°C

$$\text{Mean value} = \frac{t_1+t_2}{2} = \frac{0+0}{2} = 0.$$

Inference: The melting point of ice = 0°C

Precautions:

1. The bulb of the thermometer should be kept surrounded with ice cubes.
2. Ice should be stirred regularly to keep a uniform temperature throughout.
3. Note temperature by keeping your eyes in line with the level of mercury.

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(b) Objective: To determine the boiling point of water.

Materials required:- Distilled water,hard test tube(boiling testtube),rubber cork with two bores,delivery tube,iron stand with clamp,pieces of pumic stones,250 ml beaker,thermometer

Procedure:-

(1)Take about 70 to 100 ml of fresh (distilled) water(not hard water,which contains extra salts) in a hard test tube and add 2-3 small pieces of pumice stone.

(2)Fix a cork with two bores in the mouth of the boiling tube and clamp it with the stand.

(3)Introduce a thermometer in one bore of the rubber cork of the boiling tube and a delivery tube in the second bore. Keep the bulb of the thermometer above about 3-5 cm from the surface of the water.

(4)Place the beaker below the second end of the delivery tube to collect the condensed water.

(5)Heat the tube gently, preferably by rotating the flame. Note the temperature when boiling of water starts.Continue to heat the water remains boiling. Note the constant temperature. (6)Record your observations in tabular form.

(7) repeat the experiment three times.

Observations:-

(1) Record your observations in a table as given below:-

Sl.No	Starts Boiling (t_1)	completely boiled (t_2)
(1)	100°C	100°C
2)	100°C	100°C
(3)	100°C	100°C

$$\text{Mean value} = \frac{t_1+t_2}{2} = \frac{100+100}{2} = 100.$$

Inference: The melting point of ice = 100°C

Precaution:- (1)The bulb of the thermometer should be kept about 4-5 cm above the surface of the liquid (water).

(2) Pieces of pumice stone should be added to water before heating to avoid bumping.

(3)Heating of water should be done by rotating the flame.

(4) Note temperature by keeping your eyes in line with the level of mercury

