Determination of Melting Point

Experiment 14 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To measure the assigned physical constant and interpret its limitations.

Principle

A crystalline solid melts over a range; impurities, heating rate and specimen packing can alter that range.

Requirements

- Assigned solid or liquid
- Calibrated apparatus, suitable thermometer and PPE

Procedure

1. Prepare capillary

Use a dry, finely powdered specimen and the instrument-specified capillary packing.

2. Set up

Check calibration with a suitable melting standard.

3. Heat

Approach the expected range and use the method-specified slow rate near melting.

4. Read

Record the first liquid formation and complete melting; repeat and compare the range.

Observations and Record

Observation	Trial 1	Trial 2
Onset / measured temperature, degrees C	_____	_____
Completion / repeated reading, degrees C	_____	_____
Pressure / calibration check	_____	_____

Result

Record the observed outcome and calculated value, with units. State whether the stated laboratory specification was met; do not copy the worked example as your result.

Precautions

- Record onset and completion, not just one temperature.
- A depressed or broad range suggests possible impurity but is not an identity proof.

Viva Questions and Answers

1. Is the constant alone proof of purity?

No; it is one part of identity and purity assessment.

2. Why control heating rate?

Fast heating creates thermal lag and inaccurate readings.

3. Why use repeats?

They help reveal inconsistent conditions or reading errors.

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