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Indian Standard

PLASTICS — METHODS OF TESTING

PART 6 THERMAL PROPERTIES

Section 10 Determination of Melting Behaviour (Melting Temperature or Melting Range) of Semi-crystalline Polymers by Capillary Tube and Polarizing-Microscope Methods

(First Revision)

1 Scope

This International Standard specifies two methods for evaluating the melting behaviour of semi-crystalline polymers.

Melting temperatures determined by the different methods usually differ by several kelvins for the reasons explained in the introduction.

Method A: Capillary tube

This method is based on the changes in shape of the polymer. It is applicable to all semi-crystalline polymers and their compounds.

NOTE 1 Method A may also be useful for the evaluation of the softening of non-crystalline solids.

Method B: Polarizing microscope

This method is based on changes in the optical properties of the polymer. It is applicable to polymers containing a birefringent crystalline phase. It may not be suitable for plastics compounds containing pigments and/or other additives which could interfere with the birefringence of the polymeric crystalline zone.

NOTE 2 Another method applicable to semi-crystalline polymers is described in ISO 11357-3:1999, *Plastics — Differential scanning calorimetry (DSC) — Part 3: Determination of temperature and enthalpy of melting and crystallization*.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 291, *Plastics — Standard atmospheres for conditioning and testing*.