
**Plastics — Determination of melting
behaviour (melting temperature or melting
range) of semi-crystalline polymers by
capillary tube and polarizing-microscope
methods**

*Plastiques — Détermination du comportement à la fusion (température de
fusion ou plage de températures de fusion) des polymères semi-cristallins
par méthodes du tube capillaire et du microscope polarisant*

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 3146 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties*.

This third edition cancels and replaces the second edition (ISO 3146:1985), which has been technically revised.

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Introduction

The melting behaviour of a crystalline or semi-crystalline polymer is a structure-sensitive property.

In polymers, a sharp melting point, such as is observed for low molecular mass substances, usually does not occur; instead a melting temperature range is observed on heating, from the first change of shape of the solid particles to the transformation into a highly viscous or viscoelastic liquid, with accompanying disappearance of the crystalline phase. The melting range depends upon a number of parameters, such as molecular mass, molecular mass distribution, per cent crystallinity, and thermodynamic properties.

It may also depend on the previous thermal history of the specimens. The lower or upper limit of the melting range, or its average value, is sometimes conventionally referred to as the “melting temperature”.

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