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Plastics — Differential scanning calorimetry (DSC) —

Part 3: Determination of temperature and enthalpy of melting and crystallization

Plastiques — Analyse calorimétrique différentielle (DSC) —

Partie 3: Détermination de la température et de l'enthalpie de fusion et de cristallisation

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical chemical properties*,in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics*,in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 11357-3:2018), which has been technically revised.

The main changes are as follows:

— the scope has been limited to conventional DSC excluding fast DSC.

A list of all parts in the ISO 11357 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Plastics — Differential scanning calorimetry (DSC) —

Part 3: Determination of temperature and enthalpy of melting and crystallization

1 Scope

This document specifies a method for the determination of the temperatures and enthalpies of melting and crystallization of crystalline or partially crystalline plastics using conventional DSC as specified in ISO 11357-1.

This document is not applicable to fast DSC as specified in ISO 23976.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 472, *Plastics — Vocabulary*

ISO 11357-1, *Plastics — Differential scanning calorimetry (DSC) — Part 1: General principles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 472, ISO 11357-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
melting
transition stage between a fully crystalline or partially crystalline solid state and an amorphous liquid of variable viscosity

Note 1 to entry: The transition, also referred to as “fusion”, is characterized by an endothermic peak in the DSC curve. An exception to this definition is the case of liquid crystals, where the term “amorphous liquid” is replaced by “ordered liquid”.

3.2
crystallization
transition stage between an amorphous liquid state and a fully crystalline or partially crystalline solid state

Note 1 to entry: The transition is characterized by an exothermic peak in the DSC curve. An exception to this definition is the case of liquid crystals, where the term “amorphous liquid” is replaced by “ordered liquid”.

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