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Plastics - Differential scanning calorimetry (DSC) - Part 8: Determination of thermal conductivity (ISO 11357-8:2021)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Determination of thermal conductivity (ISO 11357-
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Plastiques - Analyse calorimétrique différentielle (DSC)
- Partie 8: Détermination de la conductivité thermique
(ISO 11357-8:2021)

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(DSC) - Teil 8: Bestimmung der Wärmeleitfähigkeit
(ISO 11357-8:2021)

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European foreword

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calorimetry (DSC) —**

**Part 8:
Determination of thermal conductivity**

*Plastiques — Analyse calorimétrique différentielle (DSC) —
Partie 8: Détermination de la conductivité thermique*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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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).

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Introduction

The advantage of using DSC for measuring the thermal conductivity of plastics is that with the same instrument also the specific heat capacity can be obtained. This enables the determination of the thermal diffusivity by dividing the thermal conductivity by the density and specific heat capacity.

In addition, DSC instruments are widely used and available in almost all test institutes and labs. Hence, measurements of thermal conductivity can be done without need for procurement of an additional instrument.

Plastics — Differential scanning calorimetry (DSC) —

Part 8: Determination of thermal conductivity

1 Scope

This document establishes a method for determination of the thermal conductivity of solid unfilled and filled or fibre reinforced plastics and composites by means of differential scanning calorimetry (DSC).

It is applicable for materials with thermal conductivities of up to 1 W/(m·K).

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

ISO 472, *Plastics — Vocabulary*

ISO 6344-1, *Coated abrasives — Grain size analysis — Part 1: Grain size distribution test*

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

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