
**Polimerni materiali - Dinamična diferenčna kalorimetrija (DSC) - 4. del:
Ugotavljanje specifične toplotne kapacitete (ISO 11357-4:2005)**

Plastics - Differential scanning calorimetry (DSC) - Part 4: Determination of specific heat capacity (ISO 11357-4:2005)

Kunststoffe - Dynamische Differenz-Thermoanalyse (DSC) - Teil 4: Bestimmung der spezifischen Wärmekapazität (ISO 11357-4:2005)

Plastiques - Analyse calorimétrique différentielle (DSC) - Partie 4: Détermination de la capacité thermique massique (ISO 11357-4:2005)

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Ta slovenski standard je istoveten z: EN ISO 11357-4:2013

ICS:

17.200.10	Toplota. Kalorimetrija	Heat. Calorimetry
83.080.01	Polimerni materiali na splošno	Plastics in general

SIST EN ISO 11357-4:2013**en,fr,de**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 11357-4

January 2013

ICS 83.080.01

English Version

**Plastics - Differential scanning calorimetry (DSC) - Part 4:
Determination of specific heat capacity (ISO 11357-4:2005)**

Plastiques - Analyse calorimétrique différentielle (DSC) -
Partie 4: Détermination de la capacité thermique massique
(ISO 11357-4:2005)

Kunststoffe - Dynamische Differenz-Thermoanalyse (DSC)
- Teil 4: Bestimmung der spezifischen Wärmekapazität
(ISO 11357-4:2005)

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Contents

Page

Foreword.....3

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Foreword

The text of ISO 11357-4:2005 has been prepared by Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 11357-4:2013 by Technical Committee CEN/TC 249 "Plastics" the secretariat of which is held by NBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2013, and conflicting national standards shall be withdrawn at the latest by July 2013.

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INTERNATIONAL
STANDARD

ISO
11357-4

First edition
2005-09-15

**Plastics — Differential scanning
calorimetry (DSC) —**

**Part 4:
Determination of specific heat capacity**

*Plastiques — Analyse calorimétrique différentielle (DSC) —
Partie 4: Détermination de la capacité thermique massique*
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Reference number
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Published in Switzerland

Contents

Page

Foreword.....	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	1
4 Principle.....	2
5 Apparatus	3
6 Test specimen	4
7 Test conditions and specimen conditioning	4
8 Procedure	4
9 Determination of specific heat capacities.....	7
10 Precision and bias	7
11 Test report	7
Annex A (informative) An approximate expression of the specific heat capacity of pure α -alumina	8
Bibliography	10

[SIST EN ISO 11357-4:2013](https://standards.iteh.ai/catalog/standards/sist/e24b9142-72ee-4a1b-b0a6-b34a69f909e0/sist-en-iso-11357-4-2013)
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ISO 11357-4:2005(E)

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11357-4 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties*.

ISO 11357 consists of the following parts, under the general title *Plastics — Differential scanning calorimetry (DSC)*:

- Part 1: *General principles*
- Part 2: *Determination of glass transition temperature*
- Part 3: *Determination of temperature and enthalpy of melting and crystallization*
- Part 4: *Determination of specific heat capacity*
- Part 5: *Determination of characteristic reaction-curve temperatures and times, enthalpy of reaction and degree of conversion*
- Part 6: *Determination of oxidation induction time*
- Part 7: *Determination of crystallization kinetics*

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Plastics — Differential scanning calorimetry (DSC) —

Part 4: Determination of specific heat capacity

1 Scope

This part of ISO 11357 specifies methods for determining the specific heat capacity of plastics by differential scanning calorimetry.

2 Normative references

The following referenced documents are indispensable for the application 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 11357-1:1997, *Plastics — Differential scanning calorimetry (DSC) — Part 1: General principles*

ISO 31-0:1992, *Quantities and units — Part 0: General principles*

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3 Terms and definitions

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

3.1

calibration material

material of known specific heat capacity

NOTE Usually, α -alumina (such as synthetic sapphire) of 99,9 % or higher purity is used as the calibration material.

3.2

specific heat capacity (at constant pressure)

c_p

quantity of heat necessary to raise the temperature of unit mass of material by 1 K at constant pressure

NOTE 1 It is given by the following equation:

$$c_p = m^{-1}C_p = m^{-1}(dQ/dT)_p \quad (1)$$

where

m is the mass of material;

C_p is the heat capacity;

dQ is the quantity of heat necessary to raise the temperature of the material by dT ;