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**Umetne mase - Diferenčna dinamična kalorimetrija (DSC) - 7. del: Ugotavljanje kristalizacijske kinetike (ISO 11357-7:2002)**

Plastics - Differential scanning calorimetry (DSC) - Part 7: Determination of crystallization kinetics (ISO 11357-7:2002)

Kunststoffe - Dynamische Differenzkalorimetrie (DDK) - Teil 7: Bestimmung der Kristallisationskinetik (ISO 11357-7:2002)

Plastiques - Analyse calorimétrique différentielle (DSC) - Partie 7: Détermination de la cinétique de cristallisation (ISO 11357-7:2002)

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**Ta slovenski standard je istoveten z: EN ISO 11357-7:2013**

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**ICS:**

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

**SIST EN ISO 11357-7:2013****en,fr,de**

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**Plastics - Differential scanning calorimetry (DSC) - Part 7:  
Determination of crystallization kinetics (ISO 11357-7:2002)**

Plastiques - Analyse calorimétrique différentielle (DSC) -  
Partie 7: Détermination de la cinétique de cristallisation  
(ISO 11357-7:2002)

Kunststoffe - Dynamische Differenz-Thermoanalyse (DSC)  
- Teil 7: Bestimmung der Kristallisationskinetik (ISO 11357-  
7:2002)

This European Standard was approved by CEN on 22 December 2012.

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## Foreword

The text of ISO 11357-7:2002 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 11357-7:2013 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of an identical text or by endorsement, at the latest by July 2013, and conflicting national standards shall be withdrawn at the latest by July 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

**Part 7:  
Determination of crystallization kinetics**

*Plastiques — Analyse calorimétrique différentielle (DSC) —  
Partie 7: Détermination de la cinétique de cristallisation*  
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Fax + 41 22 749 09 47  
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## ISO 11357-7:2002(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 3.

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 part of ISO 11357 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 11357-7 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*
- Part 8: *Determination of amount of absorbed water*

Annex A of this part of ISO 11357 is for information only.

# Plastics — Differential scanning calorimetry (DSC) —

## Part 7:

## Determination of crystallization kinetics

### 1 Scope

This part of ISO 11357 specifies two methods, isothermal and non-isothermal, for studying the crystallization kinetics of partially crystalline polymers using differential scanning calorimetry (DSC).

It is only applicable to melted polymers.

NOTE These methods are not suitable if the molecular structure of the polymer is modified during the test.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 11357. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 11357 are encouraged to investigate the possibility of applying the most recent editions of the normative documents 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 472, *Plastics — Vocabulary*

[SIST EN ISO 11357-7:2013  
https://standards.iteh.ai/catalog/standards/sist/9f49558e-6db5-43d8-885a-a5ea4a93e43a/sist-en-iso-11357-7-2013](https://standards.iteh.ai/catalog/standards/sist/9f49558e-6db5-43d8-885a-a5ea4a93e43a/sist-en-iso-11357-7-2013)

ISO 11357-1:1997, *Plastics — Differential scanning calorimetry (DSC) — Part 1: General principles*

ISO 11357-3, *Plastics — Differential scanning calorimetry (DSC) — Part 3: Determination of temperature and enthalpy of melting and crystallization*

### 3 Terms and definitions

For the purposes of this part of ISO 11357, the terms and definitions given in ISO 472, ISO 11357-1 and ISO 11357-3 and the following apply.

#### 3.1

##### crystallization kinetics

description of the rate of crystallization of a material taking into account the effects of variables such as time, temperature, pressure, stress and molecular structure

NOTE These factors and also any additives, fillers or contaminants can modify the crystallinity of the polymer at the end of crystallization.

#### 3.2

##### relative crystallinity

$\alpha$   
the ratio between the crystallinity at a particular point in time or a particular temperature and the crystallinity at the end of crystallization