

---

---

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

**Part 8:  
Determination of thermal conductivity**

*Plastiques — Analyse calorimétrique différentielle (DSC) —*

*Partie 8: Détermination de la conductivité thermique*

**(<https://standards.iteh.ai>)  
Document Preview**

[ISO 11357-8:2021](https://standards.iteh.ai/catalog/standards/iso/37209793-9e56-44b7-8271-68afdbcac4d7/iso-11357-8-2021)

<https://standards.iteh.ai/catalog/standards/iso/37209793-9e56-44b7-8271-68afdbcac4d7/iso-11357-8-2021>



**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[ISO 11357-8:2021](https://standards.iteh.ai/catalog/standards/iso/37209793-9e56-44b7-8271-68afdbcac4d7/iso-11357-8-2021)

<https://standards.iteh.ai/catalog/standards/iso/37209793-9e56-44b7-8271-68afdbcac4d7/iso-11357-8-2021>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>1</b>
<b>5 Apparatus and substances</b> .....	<b>2</b>
5.1 DSC instrument.....	2
5.2 Crucibles.....	2
5.3 Melting substance.....	2
5.4 Protective lacquer.....	3
5.5 Length measuring device.....	3
<b>6 Specimens</b> .....	<b>3</b>
6.1 Geometry.....	3
6.2 Number and sampling.....	3
<b>7 Conditioning</b> .....	<b>3</b>
<b>8 Calibration</b> .....	<b>4</b>
<b>9 Measurement procedure</b> .....	<b>4</b>
9.1 Preparation of crucibles.....	4
9.2 Use of thermal contact substances.....	4
9.3 Measurement of melting substance.....	4
9.3.1 Placing of crucibles in sample holder.....	4
9.3.2 Distribution of melting substance on crucible ground.....	4
9.3.3 Measurement of the slope of the melting curve without test specimen.....	5
9.3.4 Insertion of test specimen.....	5
9.3.5 Measurement of the slope of the melting curve with test specimen.....	5
9.4 Evaluation of the slope of the peaks of the melting substance.....	5
<b>10 Calculation of thermal conductivity</b> .....	<b>7</b>
<b>11 Service life of crucibles upon using gallium as melting substance</b> .....	<b>7</b>
<b>12 Precision and bias</b> .....	<b>7</b>
<b>13 Test report</b> .....	<b>8</b>
<b>Annex A (informative) Interlaboratory determination of thermal conductivity measured by means of DSC</b> .....	<b>9</b>
<b>Bibliography</b> .....	<b>15</b>

## 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.

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 documents 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](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

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).

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](http://www.iso.org/members.html).