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

**Part 6:
Determination of oxidation induction
time (isothermal OIT) and oxidation
induction temperature (dynamic OIT)**

Plastiques — Analyse calorimétrique différentielle (DSC) —

*Partie 6: Détermination du temps d'induction à l'oxydation (OIT
isotherme) et de la température d'induction à l'oxydation (OIT
dynamique)*





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Contents

| | Page |
|---|-----------|
| Foreword | iv |
| Introduction | v |
| 1 Scope | 1 |
| 2 Normative references | 1 |
| 3 Terms and definitions | 1 |
| 4 Principle | 2 |
| 4.1 General | 2 |
| 4.2 Oxidation induction time (isothermal OIT) | 2 |
| 4.3 Oxidation induction temperature (dynamic OIT) | 2 |
| 5 Apparatus and materials | 3 |
| 5.1 General | 3 |
| 5.2 DSC instrument | 3 |
| 5.3 Crucibles | 3 |
| 5.4 Flowmeter | 3 |
| 5.5 Oxygen | 3 |
| 5.6 Air | 3 |
| 5.7 Nitrogen | 3 |
| 5.8 Gas-selector switch and regulators | 3 |
| 6 Test specimens | 4 |
| 6.1 General | 4 |
| 6.2 Specimens from compression-moulded plates | 4 |
| 6.3 Specimens from injection-moulded plates or melt flow extrudates | 4 |
| 6.4 Specimens from finished parts | 4 |
| 7 Test conditions and specimen conditioning | 5 |
| 8 Calibration | 5 |
| 8.1 Oxidation induction time (isothermal OIT) | 5 |
| 8.2 Oxidation induction temperature (dynamic OIT) | 5 |
| 9 Procedure | 5 |
| 9.1 Setting up the instrument | 5 |
| 9.2 Loading the test specimen into the crucible | 5 |
| 9.3 Insertion of crucibles | 5 |
| 9.4 Nitrogen, air and oxygen flow | 5 |
| 9.5 Sensitivity adjustment | 6 |
| 9.6 Performance of measurement | 6 |
| 9.6.1 Oxidation induction time (isothermal OIT) | 6 |
| 9.6.2 Oxidation induction temperature (dynamic OIT) | 7 |
| 9.7 Cleaning | 7 |
| 10 Expression of results | 8 |
| 11 Precision and bias | 10 |
| 12 Test report | 10 |
| Bibliography | 12 |

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).

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).

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 11357-6:2008), which has been technically revised. The main changes compared to the previous edition are as follows:

- the normative references in [Clause 2](#) have been updated;
- techniques for purge gas flow control have been extended.

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

Introduction

The measurement of oxidation induction time or temperature described in this document provides a tool to assess the conformity of the material tested to a given formulation of plastics compounds, but it is not intended to provide the concentration of antioxidant. Different antioxidants can have different oxidation induction times or temperatures. Due to interaction of the antioxidant with other substances in the formulation, different oxidation induction times or temperatures can result even with products having the same type and concentration of antioxidant.

Plastics — Differential scanning calorimetry (DSC) —

Part 6:

Determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT)

1 Scope

This document specifies methods for the determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT) of polymeric materials by means of differential scanning calorimetry (DSC). It is applicable to polyolefin resins that are in a fully stabilized or compounded form, either as raw materials or finished products. It can be applicable to other plastics.

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 293, *Plastics — Compression moulding of test specimens of thermoplastic materials*

ISO 294-3, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 3: Small plates*

ISO 472, *Plastics — Vocabulary*

ISO 8986-2, *Plastics — Polybutene-1 (PB-1) moulding and extrusion materials — Part 2: Preparation of test specimens and determination of properties*

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

ISO 17855-2, *Plastics — Polyethylene (PE) moulding and extrusion materials — Part 2: Preparation of test specimens and determination of properties*

ISO 19069-2, *Plastics — Polypropylene (PP) moulding and extrusion materials — Part 2: Preparation of test specimens and determination of properties*

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.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>