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## 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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## 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 11357-6 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties*.

This second edition cancels and replaces the first edition (ISO 11357-6:2002), which has been technically revised. The most important changes in the revision are the following:

- a dynamic OIT method, i.e. the measurement of oxidation induction temperature, has been included;
- it is now possible to perform measurements in air as well as in oxygen;
- the range of specimen sizes has been narrowed and specimen size has been redefined in terms of thickness instead of mass;
- the possibility of making single-point routine measurements with reduced accuracy has been included.

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 (isothermal OIT) and oxidation induction temperature (dynamic OIT)*
- *Part 7: Determination of crystallization kinetics*

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## Introduction

It should be noted that the measurement of oxidation induction time or temperature described in this part of ISO 11357 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 may 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 may result even with products having the same type and concentration of antioxidant.