INTERNATIONAL STANDARD

ISO 11359-2

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Plastics — Thermomechanical analysis (TMA) —

Part 2:
Determination of coefficient of linear thermal expansion and glass transition temperature

Plastiques — Analyse thermomécanique (TMA) —

Partie 2: Détermination du coefficient de dilatation thermique linéique et de la température de transition vitreuse

Reference number
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Contents

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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 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.

International Standard ISO 11359-2 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties.*

ISO 11359 consists of the following parts, under the general title *Plastics — Thermomechanical analysis:*

— *Part 1: General principles*

— *Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature*

— *Part 3: Determination of penetration temperature*

Annex A of this part of ISO 11359 is given for information only.

Plastics — Thermomechanical analysis (TMA) —

Part 2:
Determination of coefficient of linear thermal expansion and glass transition temperature

1 Scope

This part of ISO 11359 specifies a test method, using thermodilatometry, for the determination of the coefficient of linear thermal expansion of plastics in a solid state by thermomechanical analysis (TMA). This part of ISO 11359 also specifies the determination of the glass transition temperature using TMA.

NOTE The coefficient of linear thermal expansion can be measured using various types of thermodilatometry apparatus. This part of ISO 11359 concerns only TMA apparatus.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 11359. 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 11359 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 291, *Plastics — Standard atmospheres for conditioning and testing.*

ISO 11359-1, *Plastics — Thermomechanical analysis (TMA) — Part 1: General principles.*

3 Terms and definitions

For the purposes of this part of ISO 11359, the terms and definitions given in ISO 11359-1 apply, plus the following:

3.1
thermal expansion
increase in dimensions of a specimen as a function of temperature, measured by thermodilatometry

3.2
coefficient of linear thermal expansion
reversible increase in length of a material per unit length per degree change in temperature

NOTE Two different coefficients of thermal expansion can be determined: the differential coefficient of linear thermal expansion and the mean coefficient of linear thermal expansion.