

Plastics - Determination of refractive index

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 489:2003 sisaldab Euroopa standardi EN ISO 489:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 14.08.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 489:2003 consists of the English text of the European standard EN ISO 489:1999.</p> <p>This document is endorsed on 14.08.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This standard specifies two test methods for determining the refractive index of plastics, namely: Method A: Refractive method for measuring the refractive index of moulded parts, cast or extruded sheet or film by means of a refractometer. Method B: Immersion method for determining the refractive index of powdered or granulated transparent materials by means of a microscope</p>	<p>Scope:</p> <p>This standard specifies two test methods for determining the refractive index of plastics, namely: Method A: Refractive method for measuring the refractive index of moulded parts, cast or extruded sheet or film by means of a refractometer. Method B: Immersion method for determining the refractive index of powdered or granulated transparent materials by means of a microscope</p>
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ICS 83.080.10

English version

Plastics

**Determination of refractive index
(ISO 489 : 1999)**

Plastiques – Détermination de l'indice
de réfraction (ISO 489 : 1999)

Kunststoffe – Bestimmung des
Brechungsindex (ISO 489 : 1999)

This European Standard was approved by CEN on 1999-04-01.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 489 : 1999 Plastics – Determination of refractive index,

which was prepared by ISO/TC 61 'Plastics' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 249 'Plastics', the Secretariat of which is held by IBN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by October 1999 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 489 : 1999 was approved by CEN as a European Standard without any modification.

Note: Normative references to international publications are listed in Annex ZA (normative).

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1 Scope

This International Standard specifies two test methods for determining the refractive index of plastics, namely:

- Method A: a refractometric method for measuring the refractive index of moulded parts, cast or extruded sheet or film, by means of a refractometer. It is applicable not only to isotropic transparent, translucent, coloured or opaque materials but also to anisotropic materials. The method is recommended when great accuracy is required. It is not applicable to powdered or granulated material.
- Method B: an immersion method (making use of the Becke line phenomenon) for determining the refractive index of powdered or granulated transparent materials by means of a microscope. Monochromatic light should, in general, be used to avoid dispersion effects. The accuracy of this method is about the same as that of method A. It is applicable to isotropic translucent, coloured materials but is not applicable to opaque materials nor to anisotropic materials.

NOTE 1 The refractive index is a fundamental property which can be used for checking purity and composition, for the identification of materials and for the design of optical parts. The change in refractive index with temperature may give an indication of transition points of materials.

NOTE 2 The accuracy of method B is approximately the same as that of method A when an experienced operator uses the method with extreme care (see clause 7).

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard 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 291:1997, *Plastics — Standard atmospheres for conditioning and testing*.

ISO 5725-1:1994, *Accuracy (trueness and precision) of measurement methods and results — Part 1: General principles and definitions*.

ISO 5725-2:1994, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*.

ISO 5725-3:1994, *Accuracy (trueness and precision) of measurement methods and results — Part 3: Intermediate measures of the precision of a standard measurement method*.