Irish Standard
I.S. EN ISO 4589-2:2017

Plastics - Determination of burning behaviour by oxygen index - Part 2: Ambient-temperature test (ISO 4589-2:2017)

I.S. EN ISO 4589-2:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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National Foreword

I.S. EN ISO 4589-2:2017 is the adopted Irish version of the European Document EN ISO 4589-2:2017, Plastics - Determination of burning behaviour by oxygen index - Part 2: Ambient-temperature test (ISO 4589-2:2017)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 4589-2

May 2017

ICS 13.220.40; 83.080.01

Supersedes EN ISO 4589-2:1999

English Version

Plastics - Determination of burning behaviour by oxygen index - Part 2: Ambient-temperature test (ISO 4589-2:2017)

Plastiques - Détermination du comportement au feu au moyen de l'indice d'oxygène - Partie 2: Essai à la température ambiante (ISO 4589-2:2017)

Kunststoffe - Bestimmung des Brennverhaltens durch den Sauerstoff-Index - Teil 2: Prüfung bei Umgebungstemperatur (ISO 4589-2:2017)

This European Standard was approved by CEN on 13 March 2017.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

European foreword

This document (EN ISO 4589-2:2017) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 “Plastics” the secretariat of which is held by NBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2017 and conflicting national standards shall be withdrawn at the latest by November 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 4589-2:1999.

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Endorsement notice

The text of ISO 4589-2:2017 has been approved by CEN as EN ISO 4589-2:2017 without any modification.

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I.S. EN ISO 4589-2:2017

INTERNATIONAL STANDARD

ISO 4589-2

Second edition
2017-04

Plastics — Determination of burning behaviour by oxygen index —

Part 2: Ambient-temperature test

Plastiques — Détermination du comportement au feu au moyen de l'indice d'oxygène —

Partie 2: Essai à la température ambiante

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Contents

Page

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).

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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 4, *Burning behaviour*.

This second edition cancels and replaces the first edition (ISO 4589-2:1996), which has been technically revised. It also incorporates the Amendment ISO 4589-2:1996/Amd.1:2005.

A list of all parts in the ISO 4589 series can be found on the ISO website.

Introduction

Oxygen index (OI) results obtained using the methods described in this document can provide a sensitive measure of the burning characteristics of materials under certain controlled laboratory conditions, and hence may be useful for quality control purposes. The results obtained are dependent upon the shape, orientation and isolation of the test specimen and the conditions of ignition. For particular materials or applications, it may be necessary or appropriate to specify different test conditions. Results obtained from test specimens of differing thickness or by using different ignition procedures may not be comparable and no correlation with flammability behaviour under other fire conditions is implied.

Results obtained in accordance with this document are not applicable to describe or appraise the fire hazard presented by a particular material or shape under actual fire conditions, unless used as one element of a fire risk assessment that takes into account all of the factors pertinent to the assessment of the fire hazard of a particular application for the material.

For assessing the flame propagation properties of cellular materials of density < 100 kg/m^3, attention is drawn to the method described in ISO 3582.

Plastics — Determination of burning behaviour by oxygen index —

Part 2: Ambient-temperature test

1 Scope

This document specifies methods for determining the minimum volume fraction of oxygen, in admixture with nitrogen, that will support combustion of small vertical test specimens under specified test conditions. The results are defined as oxygen index (OI) values.

Methods are provided for testing materials that are self-supporting in the form of vertical bars or sheets up to 10,5 mm thick. These methods are suitable for solid, laminated or cellular materials characterized by an apparent density 100 kg/m^3 or greater. The methods might also be applicable to some cellular materials having an apparent density of less than 100 kg/m^3. A method is provided for testing flexible sheets or film materials while supported vertically.

For comparative purposes, a procedure is provided for determining whether or not the OI of a material lies above some specified minimum value.

NOTE It might not be possible to apply these methods satisfactorily to materials that exhibit high levels of shrinkage when heated, e.g. highly oriented thin film.

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 291:2008, *Plastics — Standard atmospheres for conditioning and testing*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 2859-2, *Sampling procedures for inspection by attributes — Part 2: Sampling plans indexed by limiting quality (LQ) for isolated lot inspection*

ISO 4589-1, *Plastics — Determination of burning behaviour by oxygen index — Part 1: General requirements*

ISO 5725-2, *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 7823-1, *Plastics — Poly(methyl methacrylate) sheets — Types, dimensions and characteristics — Part 1: Cast sheets*

ISO 13943, *Fire safety –Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4589-1 and ISO 13943 apply.