SLOVENSKI STANDARD
SIST EN ISO 4577:2000

01-maj-2000

Polimerni materiali - Polipropilen in kopolimeri propilena - Določanje termične oksidativne stabilnosti na zraku - Metoda s peči (ISO 4577:1983)

Plastics - Polypropylene and propylene-copolymers - Determination of thermal oxidative stability in air - Oven method (ISO 4577:1983)

Kunststoffe - Polypropylen und Propylen-Copolymere - Bestimmung der thermischen Oxidationsstabilität in Luft - Ofen-Verfahren (ISO 4577:1983)

Plastiques - Polypropylene et copolymeres de propylene - Détermination de la stabilité a l'oxydation a chaud dans l'air - Méthode a l'étuve (ISO 4577:1983)

Ta slovenski standard je istoveten z: **EN ISO 4577:1999**

ICS:

83.080.20	Plastomeri	Thermoplastic materials

SIST EN ISO 4577:2000 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 4577

June 1999

ICS 83.080.20

English version

Plastics - Polypropylene and propylene-copolymers - Determination of thermal oxidative stability in air - Oven method (ISO 4577:1983)

Plastiques - Polypropylène et copolymères de propylène - Détermination de la stabilité à l'oxydation à chaud dans l'air - Méthode à l'étuve (ISO 4577:1983)

Kunststoffe - Polypropylen und Propylen-Copolymere - Bestimmung der thermischen Oxidationsstabilität in Luft - Ofen-Verfahren (ISO 4577:1983)

This European Standard was approved by CEN on 6 May 1999.

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.

This European Standard exists 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.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Ref. No. EN ISO 4577:1999 E

Foreword

The text of the International Standard from Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

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 December 1999, and conflicting national standards shall be withdrawn at the latest by December 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 4577:1983 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

Annex ZA (normative)
Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

Publication	Year	Title	EN	Year
ISO 291	1997	Plastics - Standard atmospheres for conditioning and testing	EN ISO 291	1997
ISO 1133	1997	Plastics - Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics	EN ISO 1133	1999
ISO 1873-1	1995	Plastics - Polypropylene (PP) moulding and extrusion materials - Part 1: Designation system and basis for specifications	EN ISO 1873-1	1995
ISO 1873-2	1997	Plastics - Polypropylene (PP) moulding and extrusion materials - Part 2: Preparation of test specimens and determination of properties	EN ISO 1873-2	1997

International Standard 4577

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Plastics — Polypropylene and propylene-copolymers — Determination of thermal oxidative stability in air — Oven method

Plastiques — Polypropylène et copolymères de propylène — Détermination de la stabilité à l'oxydation à chaud dans l'air — Méthode à l'étuve

First edition — 1983-08-15

UDC 678.742.3-13 : 620.193.54 **Ref. No. ISO 4577-1983 (E)**

Descriptors : plastics, polypropylene, stability tests, thermal stability, high temperature tests, oxidation tests, ageing tests (materials).

Price based on 4 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4577 was developed by Technical Committee ISO/TC 61, *Plastics*, and was circulated to the member bodies in May 1982.

It has been approved by the member bodies of the following countries:

Australia	Germany, F.R.	Romania
Austria	Hungary	South Africa, Rep. of
Belgium	Iran	Spain
Brazil	Israel	Sri Lanka
Canada	Italy	Sweden
China	Jamaica	Switzerland
Czechoslovakia	Japan	United Kingdom
Egypt, Arab Rep. of	Korea, Rep. of	USA
Finland	Netherlands	USSR
France	Poland	

The member body of the following country expressed disapproval of the document on technical grounds:

India

Printed in Switzerland

Plastics — Polypropylene and propylene-copolymers — Determination of thermal oxidative stability in air — Oven method

1 Scope and field of application

This International Standard specifies a method for the determination of the resistance of moulded test specimens of polypropylene and propylene-copolymers to accelerated ageing by heat in the presence of air using a forced draught oven.

The method represents an attempt to estimate the service life of parts fabricated from propylene plastics.

The stability determined by this method is not directly related to the suitability of the material for use when different environmental conditions prevail.

NOTE — The specified thermal levels are considered sufficiently severe to cause failure of commercial grades of heat-stable propylene plastics within a reasonable period of time. If desired, lower temperatures can be applied to estimate the performance of propylene plastics with lower heat stabilities.

2 References

ISO 291, *Plastics — Standard atmospheres for conditioning and testing.*

ISO 1133, *Plastics — Determination of the melt flow rate of thermoplastics.*

ISO 1191, *Plastics — Polyethylenes and polypropylenes in dilute solution — Determination of viscosity number and of limiting viscosity number.*

ISO 1873, *Plastics — Polypropylene and propylene-copolymer thermoplastics —*

Part 1: Designation.

Part 2: Determination of properties. [1)]

3 Principle

Accelerated ageing of test specimens by heat in the presence of air using a forced draught oven. Visual examination and determination of the time to failure.

Under the severe conditions of this test, the specimens undergo degradation at a rate dependent upon the thermal endurance of the propylene plastic under examination.

For the purpose of this International Standard, the time to failure of the material is taken as the number of days after which the specimen shows localized crazing, crumbling and/or discoloration.

If a more reliable estimate of the life-temperature relationship of propylene plastics is required, the test may be conducted at several temperatures and the data interpreted through use of the Arrhenius relation, by plotting the logarithms of times to failure against the reciprocals of the temperatures in kelvins. Temperatures in the range from 100 to 150 °C, with intervals of 10 °C, are suggested for this purpose.

4 Apparatus

4.1 Oven, mechanical convection type, capable of controlled circulation of air, with adjustable air intake and exhaust, equipped with a specimen holder and a temperature control system capable of adjustment to meet the following conditions:

a) exhaust rate: at least one oven-chamber volume in 10 min;

b) air velocity: from 0,75 to 1 m/s at any oven position occupied by the test specimens;

c) temperature control: range up to 200 °C and with control throughout the working range to the nearest 1 °C. The temperature control shall include a device to prevent temperature overrides. It is recommended that a device be used for recording the temperature inside the oven.

1) At present at the stage of draft.