



SLOVENSKI STANDARD
SIST EN ISO 960:2000

01-maj-2000

Dc`ja Yfb]a Uhf]U]!`Dc`]Ua]X]fD5 Ł!`8 c`c Yj Ub`Y]j cXYfIGC` - *\$.% , , Ł

Plastics - Polyamides (PA) - Determination of water content (ISO 960:1998)

Kunststoffe - Polyamide (PA) - Bestimmung des Wassergehaltes (ISO 960:1988)

Plastiques - Polyamides (PA) - Détermination de la teneur en eau (ISO 960:1988)

Ta slovenski standard je istoveten z: EN ISO 960:1997

[SIST EN ISO 960:2000](https://standards.iteh.ai/catalog/standards/sist/25daf095-11b4-455e-8ba4-15a1a9843413/sist-en-iso-960-2000)

<https://standards.iteh.ai/catalog/standards/sist/25daf095-11b4-455e-8ba4-15a1a9843413/sist-en-iso-960-2000>

ICS:

83.080.20 Plastomeri Thermoplastic materials

SIST EN ISO 960:2000 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 960:2000

<https://standards.iteh.ai/catalog/standards/sist/25daf095-11b4-455e-8ba4-15a1a9843413/sist-en-iso-960-2000>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 960

November 1997

ICS

Descriptors: see ISO document.

English version

Plastics - Polyamides (PA) - Determination of water content (ISO 960:1988)

Plastiques - Polyamides (PA) - Détermination de la teneur en eau (ISO 960:1988)

Kunststoffe - Polyamide (PA) - Bestimmung des Wassergehaltes (ISO 960:1988)

This European Standard was approved by CEN on 16 October 1997.

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.

[SIST EN ISO 960:2000](https://standards.iteh.ai/catalog/standards/sist/25daf095-11b4-455e-8ba4-15a1a9843413/sist-en-iso-960-2000)

<https://standards.iteh.ai/catalog/standards/sist/25daf095-11b4-455e-8ba4-15a1a9843413/sist-en-iso-960-2000>



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

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

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 May 1998, and conflicting national standards shall be withdrawn at the latest by May 1998.

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

iTeh STANDARD PREVIEW

The text of the International Standard ISO 960:1988 has been approved by CEN as a European Standard without any modification.

SIST EN ISO 960:2000

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

15a1a9843413/sist-en-iso-960-2000



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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 3146	1985	Plastics - Determination of melting (melting temperature or melting range) of semi-crystalline polymers	EN ISO 3146	1997

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 960:2000

<https://standards.iteh.ai/catalog/standards/sist/25daf095-11b4-455e-8ba4-15a1a9843413/sist-en-iso-960-2000>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 960:2000

<https://standards.iteh.ai/catalog/standards/sist/25daf095-11b4-455e-8ba4-15a1a9843413/sist-en-iso-960-2000>

INTERNATIONAL STANDARD

ISO
960

First edition
1988-08-15



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

Plastics — Polyamides (PA) — Determination of water content

Plastiques — Polyamides (PA) — Détermination de la teneur en eau

SISTEN ISO 960:2000

SISTEN ISO 960:2000

<https://standards.iteh.ai/catalog/standards/sist/25da1095-11b4-455e-8ba4-15a1a9843413/sist-en-iso-960-2000>

PRE-STANDARD PREVIEW
(standards.iteh.ai)

ISO 960 : 1988 (E)

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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 960 was prepared by Technical Committee ISO/TC 61, *Plastics*.

It cancels and replaces ISO Recommendation R 960 : 1969, of which it constitutes a technical revision.

ITEH STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 960:2000

<https://standards.iteh.ai/catalog/standards/sist/25daf095-11b4-455e-8ba4-15a1a9843413/sist-en-iso-960-2000>

Plastics — Polyamides (PA) — Determination of water content

1 Scope

1.1 This International Standard specifies methods for the determination of the water content of polyamides and copolyamides as granules and finished articles. The methods are applicable for the determination of water contents down to 0,01 % (*m/m*). The water content is of importance in connection with the processing of PA, during which it should have a low value to prevent degradation, and for checking the moisture content of test specimens and finished articles.

1.2 Four alternative methods are specified in this International Standard.

Method A is an extraction method using anhydrous methanol and titration of the water by the Karl Fischer method. It is applicable to granules having a maximum size of 4 mm × 4 mm × 3 mm and can be used for all polyamides and copolyamides.

Method B is a method of extraction by melting under vacuum and titration of the water by the Karl Fischer method. It may be applied to granules or pieces of mouldings but not to fine powders (particle size less than 400 μm). For low water content (less than 0,1 % (*m/m*)) and precise determination, it is necessary to make a correction for the water of polycondensation¹⁾. This method is not recommended when, during the determination, due to a change in molecular mass, additional water is formed or existing water is bound, except when appropriate correction can be made.

Method C is a method of extraction by dissolving in a mixture of 3-methylphenol and toluene and titration of the water by the Karl Fischer method. It yields results close to those obtained by method A. It has the advantage of being applicable to granules and powders of all sizes and to finished articles with little or no reduction in size.

NOTE — The three methods A, B and C differ in the procedure for isolating the water, which is determined in all three cases by the Karl Fischer method.

Method D is a manometric method. The water content is determined from the pressure increase after evaporation of the water under vacuum. This method cannot be used for polyamides polymerized with strong acids.

1.3 Method C is the reference method.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 760 : 1978, *Determination of water — Karl Fischer method (General method)*.

ISO 3146 : 1985, *Plastics — Determination of melting behaviour (melting temperature or melting range) of semi-crystalline polymers*.

3 Method A — Extraction with anhydrous methanol

3.1 Principle

Extraction of a test portion with anhydrous methanol and determination of the extracted water by the Karl Fischer method.

3.2 Reagents

During the analysis, use only reagents of recognized analytical grade.

3.2.1 Methanol, anhydrous, having a water content less than 0,1 % (*m/m*).

3.2.2 Karl Fischer reagent (see 6.2).

3.3 Apparatus

Ordinary laboratory apparatus and

3.3.1 Glass flasks, of capacity 250 ml, provided with ground glass or rubber stoppers.

1) See KLINE, G.M., *Analytical Chemistry of Polymers. Intersc. Pub.*, Part 1, p. 282 (1958).