SLOVENSKI STANDARD
SIST EN ISO 12228:2000

01-maj-2000

Rastlinske in živalske maščobe in olja - Določevanje posameznih in celotnih sterolov - Plinska kromatografska metoda (ISO 12228:1999)

Animal and vegetable fats and oils - Determination of individual and total sterols contents - Gas chromatographic method (ISO 12228:1999)

Tierische und pflanzliche Fette und Öle - Bestimmung der individuellen und der Gesamtsterine - Gaschromatographisches Verfahren (ISO 12228:1999)

Corps gras d'origines animale et végétale - Détermination de la teneur en stérols individuels et totaux - Méthode par chromatographie en phase gazeuse (ISO 12228:1999)

Ta slovenski standard je istoveten z: **EN ISO 12228:1999**

ICS:

67.200.10	Rastlinske in živalske maščobe in olja	Animal and vegetable fats and oils

SIST EN ISO 12228:2000 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 12228

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English version

Animal and vegetable fats and oils - Determination of individual and total sterols contents - Gas chromatographic method (ISO 12228:1999)

Corps gras d'origines animale et végétale - Détermination de la teneur en stérols individuels et totaux - Méthode par chromatographie en phase gazeuse (ISO 12228:1999)

Tierische und pflanzliche Fette und Öle - Bestimmung der individuellen und der Gesamtsterine - Gaschromatographisches Verfahren (ISO 12228:1999)

This European Standard was approved by CEN on 17 January 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

Foreword

The text of the International Standard ISO 12228:1999 has been prepared by Technical Committee ISO/TC 34 "Agricultural food products" in collaboration with Technical Committee CEN/TC 307 "Oilseeds, vegetable and animal fats and oils and their by-products - Methods of sampling and analysis", the secretariat of which is held by AFNOR.

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 September 1999, and conflicting national standards shall be withdrawn at the latest by September 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 12228:1999 was 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 661	1989	Animal and vegetable fats and oils – Preparation of test sample	EN ISO 661	1995
ISO 3696	1987	Water for analytical laboratory use – Specification and test methods	EN ISO 3696	1995

INTERNATIONAL STANDARD

ISO 12228

First edition
1999-03-01

Animal and vegetable fats and oils — Determination of individual and total sterols contents — Gas chromatographic method

Corps gras d'origines animale et végétale — Détermination de la teneur en stérols individuels et totaux — Méthode par chromatographie en phase gazeuse

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.

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 12228 was prepared by ISO/TC 34, *Agricultural food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*.

Annexes A and B of this International Standard are for information only.

Animal and vegetable fats and oils — Determination of individual and total sterols contents — Gas chromatographic method

1 Scope

This International Standard specifies a method for the gas chromatographic determination of the contents and compositions of sterols in animal and vegetable fats and oils.

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 indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 661:1989, *Animal and vegetable fats and oils — Preparation of test samples.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1
composition of sterols
composition of individual sterols in the sample, beginning with cholesterol and ending with Δ7-avenasterol (see table 1) under the conditions specified in this International Standard

NOTE The composition is expressed as peak area, in percent, and normalized to 100 %.

3.2
total sterol content
mass of the sum of all individual sterols, as determined in accordance with the method specified in this International Standard, beginning with cholesterol and ending with Δ7-avenasterol (see table 1), divided by the mass of the test portion

NOTE The content is expressed in milligrams per 100 g.

4 Principle

A test portion is saponified by boiling under reflux with an ethanolic potassium hydroxide solution. The unsaponifiable matter is isolated by solid-phase extraction on an aluminium oxide column. The aluminium oxide column is used to retain the fatty acid anions; sterols pass through the column. The sterol fraction from the unsaponifiable matter is separated by thin-layer chromatography. The qualitative and quantitative compositions of the sterol fraction are determined by gas chromatography using betulin as an internal standard.