

SLOVENSKI STANDARD

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Nadomešča:

SIST EN ISO 9936:2006

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Rastlinske in živalske maščobe in olja - Določevanje tokoferola in tokotrienola s tekočinsko kromatografijo visoke ločljivosti (ISO 9936:2016)

Animal and vegetable fats and oils - Determination of tocopherol and tocotrienol contents by high-performance liquid chromatography (ISO 9936:2016)

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Tierische und pflanzliche Fette und Öle - Bestimmung des Tocopherol- und Tocotrienol-Gehaltes mittels Hochleistungsflüssigchromatographie (ISO 9936:2016)

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Corps gras d'origines animale et végétale -- Détermination des teneurs en tocophérols et en tocotriénols par chromatographie en phase liquide à haute performance (ISO 9936:2016)

Ta slovenski standard je istoveten z: EN ISO 9936:2016

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67.200.10	Rastlinske in živalske maščobe in olja	Animal and vegetable fats and oils
71.040.50	Fizikalnokemijske analitske metode	Physicochemical methods of analysis

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 9936

April 2016

ICS 67.200.10

Supersedes EN ISO 9936:2006

English Version

**Animal and vegetable fats and oils - Determination of
tocopherol and tocotrienol contents by high-performance
liquid chromatography (ISO 9936:2016)**

Corps gras d'origines animale et végétale -
Détermination des teneurs en tocophérols et en
tocotriénols par chromatographie en phase liquide à
haute performance (ISO 9936:2016)

Tierische und pflanzliche Fette und Öle - Bestimmung
des Tocopherol- und Tocotrienol-Gehaltes mittels
Hochleistungsflüssigchromatographie (ISO 9936:2016)

This European Standard was approved by CEN on 4 March 2016.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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European foreword

This document (EN ISO 9936:2016) has been prepared by Technical Committee ISO/TC 34 “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 October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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.

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Endorsement notice

The text of ISO 9936:2016 has been approved by CEN as EN ISO 9936:2016 without any modification.

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INTERNATIONAL STANDARD

ISO
9936

Third edition
2016-04-01

Animal and vegetable fats and oils — Determination of tocopherol and tocotrienol contents by high- performance liquid chromatography

*Corps gras d'origines animale et végétale — Détermination des
teneurs en tocophérols et en tocotriénols par chromatographie en
phase liquide à haute performance*

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ISO 9936:2016(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.

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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 meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](http://www.iso.org/foreword)

The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*.

This third edition cancels and replaces the second edition (ISO 9936:2006), which has been technically revised. It also incorporates the Amendment ISO 9936:2006/Amd 1:2011 and the Technical Corrigendum ISO 9936:2006/Cor.1:2008. A non-applicability statement for milk and milk products has been added to the Scope.

Animal and vegetable fats and oils — Determination of tocopherol and tocotrienol contents by high-performance liquid chromatography

1 Scope

This International Standard specifies a method for the determination of the contents of free α -, β -, γ -, and δ -tocopherols and tocotrienols (referred to jointly as tocols) in animal and vegetable fats and oils (referred to hereinafter as fats) by high-performance liquid chromatography (HPLC).

For products containing tocopherol or tocotrienol esters, it is necessary to carry out a preliminary saponification.

Milk and milk products (or fat coming from milk and milk products) are excluded from the Scope of this International Standard.

NOTE A suitable method involving a cold saponification procedure is described in [Annex B](#) for information only.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 661, *Animal and vegetable fats and oils — Preparation of test sample*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

tocol content

mass fraction of the individual tocots, determined using the method specified in this International Standard

Note 1 to entry: The content is expressed in milligrams per kilogram as a whole number.

4 Principle

A test portion is dissolved in *n*-heptane and the individual tocots are separated by high-performance liquid chromatography (HPLC). The content of each tocol is calculated using calibration factors determined from calibration solutions.

5 Reagents

Use only reagents of HPLC grade or equivalent.

5.1 α -, β -, γ - and δ -tocopherol and tocotrienol standards.

If tocopherol standards are not available, a blend of wheat germ and soya bean oil may be used to identify α -, β -, γ - and δ -tocopherols.