

# ***Geregistreeerde Belgische norm***

**NBN EN ISO 16931**

1e uitg., december 2001

**Normklasse: V 06**

## **Dierlijke en plantaardige vetten en oliën - Bepaling van het gehalte aan gepolymeriseerde triglyceriden door hoge-prestatie maatuitsluitingchromatografie (HPSEC) (ISO 16931:2001)**

Corps gras d'origines animale et végétale - Détermination de la teneur en triglycérides polymérisés par chromatographie liquide d'exclusion à haute performance (CLHP d'exclusion) (ISO 16931/2001)

Animal and vegetable fats and oils - Determination of polymerized triglycerides by high-performance size-exclusion chromatography (HPSEC) (ISO 16931:2001)

### **Toelating tot publicatie: 04 december 2001**

Deze Europese norm EN ISO 16931 : 2001 heeft de status van een Belgische norm.

Deze Europese norm bestaat in drie officiële versies (Duits, Engels, Frans).

***norme belge  
enregistrée***

**NBN EN ISO 16931**

1e éd., décembre 2001

**Indice de classement: V 06**

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**Autorisation de publication: 04 décembre 2001**

La présente norme européenne EN ISO 16931 : 2001 a le statut d'une norme belge.

La présente norme européenne existe en trois versions officielles (allemand, anglais, français).

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 16931**

October 2001

ICS 67.200.10

English version

**Animal and vegetable fats and oils - Determination of  
polymerized triglycerides by high-performance size-exclusion  
chromatography (HPSEC) (ISO 16931:2001)**

Corps gras d'origines animale et végétale - Détermination  
de la teneur en triglycérides polymérisés par  
chromatographie liquide d'exclusion à haute performance  
(CLHP d'exclusion) (ISO 16931:2001)

Tierische und pflanzliche Fette und Öle - Bestimmung der  
polymerisierten Triglyceride mit Hochleistungs-  
Ausschlusschromatographie (ISO 16931:2001)

This European Standard was approved by CEN on 3 September 2001.

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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 Management Centre has the same status as the official versions.

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## EN ISO 16931:2001 (E)

### Foreword

The text of the International Standard ISO 16931:2001 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 April 2002, and conflicting national standards shall be withdrawn at the latest by April 2002.

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.

**NOTE FROM CMC** The foreword is susceptible to be amended on reception of the German language version. The confirmed or amended foreword, and when appropriate, the normative annex ZA for the references to international publications with their relevant European publications will be circulated with the German version.

### Endorsement notice

The text of the International Standard ISO 16931:2001 was approved by CEN as a European Standard without any modification.

# INTERNATIONAL STANDARD

**ISO**  
**16931**

First edition  
2001-10-01

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## **Animal and vegetable fats and oils — Determination of polymerized triglycerides content by high-performance size- exclusion chromatography (HPSEC)**

*Corps gras d'origines animale et végétale — Détermination de la teneur en triglycérides polymérisés par chromatographie liquide d'exclusion à haute performance (CLHP d'exclusion)*



Reference number  
ISO 16931:2001(E)

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Printed in Switzerland

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 16931 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*.

Annex A of this International Standard is for information only.





# Animal and vegetable fats and oils — Determination of polymerized triglycerides content by high-performance size-exclusion chromatography (HPSEC)

## 1 Scope

This International Standard specifies a method using HPSEC to determine the contents of polymerized triglycerides in oils and fats which contain at least 3 % (from peak areas) of these polymers.

This method is applicable to frying fats, and fats and oils that have been thermally treated. It can also be applied to the determination of polymers in fats for animal feedstuffs.

NOTE 1 Polymerized triglycerides (strictly speaking dimeric and oligomeric triglycerides) are formed during the heating of fats and oils, thus the method serves to assess the thermal deterioration of frying fats with use.

NOTE 2 In the case of analysis of fats from animal feeding stuffs, the extraction method used can have an influence on the result (see ISO 6492).

## 2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

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

## 3 Term and definition

For the purposes of this International Standard, the following term and definition applies.

### 3.1

#### **polymerized triglycerides**

constituents of heated fats and oils that are determined by HPSEC under the conditions specified in this International Standard

NOTE The content is expressed as a percentage of all peaks from eluted acylglycerides (TAGs, PTAGs, DAGs and MAGs).

## 4 Principle

The sample is dissolved in tetrahydrofuran then the polymerized triglycerides are separated by gel permeation chromatography according to molecular size. Detection of the compounds is realized by means of a refractive index detector.