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Geregistreerde Belgische norm

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Normklasse: V 06

Dierlijke en plantaardige vetten en oliën - Bepaling van het gehalte aan gepolymeriseerde triacylglycerolen door hoge-prestatie maatuitsluitingchromatografie (HPSEC) (ISO 16931:2009)

Corps gras d'origines animale et végétale - Détermination de la teneur en triacylglycérols polymérisés par chromatographie liquide d'exclusion à haute performance (CLHP d'exclusion) (ISO 16931:2009)

Animal and vegetable fats and oils - Determination of polymerized triacylglycerols by high-performance sizeexclusion chromatography (HPSEC) (ISO 16931:2009)

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

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Tierische und pflanzliche Fette und Öle - Bestimmung des Gehaltes an polymerisierten Triglyceriden mit Hochleistungs-Ausschlusschromatographie (HPSEC) (ISO 16931:2009)

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Foreword

This document (EN ISO 16931:2009) 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of an identical text or by endorsement, at the latest by October 2009, and conflicting national standards shall be withdrawn at the latest by October 2009.

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Endorsement notice

The text of ISO 16931:2009 has been approved by CEN as a EN ISO 16931:2009 without any modification.

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INTERNATIONAL STANDARD

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Second edition
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Animal and vegetable fats and oils — Determination of polymerized triacylglycerols by high-performance size-exclusion chromatography (HPSEC)

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

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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.

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

This second edition cancels and replaces the first edition (ISO 16931:2001), which has been technically revised.

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

1 Scope

This International Standard specifies a method using high-performance size-exclusion chromatography (HPSEC) to determine the contents, as mass fractions, of polymerized triacylglycerols (PTAGs) in oils and fats which contain at least 3 % (from peak areas) of these polymers. PTAGs (strictly speaking dimeric and oligomeric triacylglycerols) are formed during the heating of fats and oils, and thus, the method serves to assess the thermal deterioration of frying fats after use.

This method is applicable to frying fats and fats and oils that have been thermally treated, provided that the content of PTAGs is at least 3 %. It can also be applied to the determination of polymers in fats for animal feedstuffs, although in this case, the extraction method used can have an influence on the result.

NOTE For further details, see ISO 6492[4].

2 Normative references

The following referenced documents are indispensable for the application of this document. 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 International Standard, the following terms and definitions apply.

3.1
polymerized triacylglycerols
PTAGs

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

NOTE The content of PTAGs is expressed as a percentage mass fraction, in grams per 100 g, of all peaks from eluted polymerized and mono-, di-, and triacylglycerols (PTAGs, MAGs, DAGs, and TAGs).

4 Principle

The sample is homogeneously mixed with tetrahydrofuran (THF) and PTAGs separated by gel permeation chromatography according to molecular size. The compounds are detected by means of a refractive index detector.

NOTE For better resolution, two columns in series (2 × 300 mm) are used.