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SIST EN ISO 13884:2005

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 13884**

August 2005

ICS 67.200.10

English Version

**Animal and vegetable fats and oils - Determination of isolated  
trans isomers by infrared spectrometry (ISO 13884:2003)**

Corps gras d'origines animale et végétale - Détermination,  
par spectrométrie infrarouge, des isomères trans isolés  
(ISO 13884:2003)

Tierische und pflanzliche Fette und Öle - Bestimmung  
isolierter trans-Isomere durch Infrarot-Spektrometrie (ISO  
13884:2003)

This European Standard was approved by CEN on 28 July 2005.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

**EN ISO 13884:2005 (E)****Foreword**

The text of ISO 13884:2003 has been prepared by Technical Committee ISO/TC 34 "Agricultural food products" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 13884:2005 by 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 February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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The text of ISO 13884:2003 has been approved by CEN as EN ISO 13884:2005 without any modifications.

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INTERNATIONAL  
STANDARD

ISO  
13884

First edition  
2003-07-01

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**Animal and vegetable fats and oils —  
Determination of isolated *trans* isomers  
by infrared spectrometry**

*Corps gras d'origines animale et végétale — Détermination, par  
spectrométrie infrarouge, des isomères trans isolés*

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Reference number  
ISO 13884:2003(E)

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## ISO 13884:2003(E)

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Published 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 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13884 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*.

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# Animal and vegetable fats and oils — Determination of isolated *trans* isomers by infrared spectrometry

## 1 Scope

This International Standard specifies a method for the accurate determination of isolated *trans* bonds in natural or processed long-chain fatty acids, fatty acid esters and triglycerides with *trans* isomer levels  $\geq 5\%$ .

The method is not applicable, or is applicable only with specific precautions, to

- fats and oils containing high levels (over 5 %) of conjugated unsaturation (e.g. tung oil),
- materials containing functional groups which modify the intensity of the C-H deformation about the *trans* double bond [e.g. castor oil containing ricinoleic acid or its geometrical isomer, ricinelaic acid (12-hydroxy-9-octadecenoic acid)],
- mixed triglycerides having long- and short-chain moieties (such as diacetostearin), or in general,
- any materials containing constituents which have functional groups which give rise to specific absorption bands at or sufficiently close to interfere with the  $966\text{ cm}^{-1}$  band of the C-H deformation of the isolated *trans* double bond.

NOTE Dienes, such as *cis-trans* and *trans-trans* dienes, can affect the calibration.

For accurate determinations on materials with *trans* levels below 5 %, a standardized capillary GLC method is recommended (for example, see ISO 15304).

## 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*

ISO 5509, *Animal and vegetable fats and oils — Preparation of methyl esters of fatty acids*

## 3 Terms and definitions

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

### 3.1

#### percentage of *trans* fatty acids

#### % *trans*

quantity of those substances in the sample, expressed in terms of the mass equivalent of methyl elaidate, divided by the sample mass expressed in grams per 10 ml of solvent