

BS EN ISO 6886:2016



BSI Standards Publication

# Animal and vegetable fats and oils — Determination of oxidative stability (accelerated oxidation test) (ISO 6886:2016)

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**National foreword**

This British Standard is the UK implementation of EN ISO 6886:2016. It supersedes BS EN ISO 6886:2008 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee AW/307, Oilseeds, animal and vegetable fats and oils and their by-products.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

## Animal and vegetable fats and oils - Determination of oxidative stability (accelerated oxidation test) (ISO 6886:2016)

Corps gras d'origines animale et végétale -  
Détermination de la stabilité à l'oxydation (essai  
d'oxydation accéléré) (ISO 6886:2016)

Tierische und pflanzliche Fette und Öle - Bestimmung  
der Oxidationsstabilität (beschleunigter  
Oxidationstest) (ISO 6886:2016)

This European Standard was approved by CEN on 13 February 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.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## European foreword

This document (EN ISO 6886:2016) 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 September 2016, and conflicting national standards shall be withdrawn at the latest by September 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.

This document supersedes EN ISO 6886:2008.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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 the United Kingdom.

### Endorsement notice

The text of ISO 6886:2016 has been approved by CEN as EN ISO 6886:2016 without any modification.

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>1</b>
<b>5 Reagents and materials</b> .....	<b>2</b>
<b>6 Apparatus</b> .....	<b>2</b>
<b>7 Sampling</b> .....	<b>3</b>
<b>8 Preparation of test sample and apparatus</b> .....	<b>5</b>
8.1 Preparation of test sample.....	5
8.2 Preparation of apparatus.....	5
8.2.1 Cleaning procedure.....	5
8.2.2 Determination of temperature correction.....	6
<b>9 Procedure</b> .....	<b>6</b>
<b>10 Calculations</b> .....	<b>8</b>
10.1 Manual calculation.....	8
10.2 Automatic calculation.....	8
<b>11 Precision</b> .....	<b>8</b>
11.1 Results of interlaboratory test.....	8
11.2 Repeatability.....	8
11.3 Reproducibility.....	8
<b>12 Test report</b> .....	<b>8</b>
<b>Annex A (informative) Summary of the method and examples of conductivity curves and the determination of induction time</b> .....	<b>9</b>
<b>Annex B (informative) Results of an interlaboratory test</b> .....	<b>11</b>
<b>Bibliography</b> .....	<b>13</b>

## 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](http://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](http://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](#)

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 6886:2006), of which it constitutes a minor revision.

# Animal and vegetable fats and oils — Determination of oxidative stability (accelerated oxidation test)

## 1 Scope

This International Standard specifies a method for the determination of the oxidative stability of fats and oils under extreme conditions that induce rapid oxidation: high temperature and high air flow. It does not allow determination of the stability of fats and oils at ambient temperatures, but it does allow a comparison of the efficacy of antioxidants added to fats and oils.

The method is applicable to both virgin and refined animal and vegetable fats and oils. Milk and milk products (or fat coming from milk and milk products) are excluded from the scope of this International Standard.

NOTE The presence of volatile fatty acids and volatile acidic oxidation products prevents accurate measurement.

## 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

#### **induction period**

time between the start of the measurement and the time when the formation of oxidation products rapidly begins to increase

### 3.2

#### **oxidative stability**

induction period, expressed in hours, determined according to the procedure specified in this International Standard

Note 1 to entry: A temperature of 100 °C to 120 °C is usually applied for the determination of oxidative stability. Depending on the oxidative stability of the sample under test, or when an extrapolation of regression is required, the determination may be carried out at other temperatures. The optimal induction period is between 6 h to 24 h. A temperature increase or decrease of 10 °C decreases or increases the induction period by a factor of approximately 2.

### 3.3

#### **conductivity**

ability of a material to conduct electric current

## 4 Principle

A stream of purified air is passed through the sample, which has been brought to a specified temperature. The gases released during the oxidation process, together with the air, are passed into a flask containing water that has been demineralized or distilled and contains an electrode for