

Animal and vegetable fats and oils - Determination of peroxide value - Iodometric (visual) endpoint determination (ISO 3960:2017)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 3960:2017 sisaldab Euroopa standardi EN ISO 3960:2017 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 3960:2017 consists of the English text of the European standard EN ISO 3960:2017.
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English Version

Animal and vegetable fats and oils - Determination of
peroxide value - Iodometric (visual) endpoint
determination (ISO 3960:2017)

Corps gras d'origines animale et végétale -
Détermination de l'indice de peroxyde - Détermination
avec point d'arrêt iodométrique (ISO 3960:2017)

Tierische und pflanzliche Fette und Öle - Bestimmung
der Peroxidzahl - Iodometrische (visuelle)
Endpunktbestimmung (ISO 3960:2017)

This European Standard was approved by CEN on 8 February 2017.

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

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European foreword

This document (EN ISO 3960:2017) 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of an identical text or by endorsement, at the latest by August 2017, and conflicting national standards shall be withdrawn at the latest by August 2017.

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 3960:2010.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 3960:2017 has been approved by CEN as EN ISO 3960:2017 without any modification.

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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.

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).

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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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This fifth edition cancels and replaces the fourth edition (ISO 3960:2007), of which it constitutes a minor revision to exclude fat coming from milk and milk products.

Introduction

Over a period of many years, various methods have been developed for the determination of peroxides in fats and oils. The general principle of most of the methods is the liberation of iodine from potassium iodide in an acid medium. The method according to Wheeler was standardized more than 50 years ago by different standardization bodies, and it is widely used to control commodities by producers, receivers and official laboratories. In national and international food legislation (including the Codex Alimentarius), acceptable limits for the peroxide values are often specified. Due to anomalies in the reproducibility of the results, it was noticed that there are slight differences between the standardized methods. A very important point is the dependence of the result on the amount of sample used for the determination. As the determination of the peroxide value (PV) is a highly empirical procedure, ISO/TC 34/SC 11 has decided to fix the sample mass at 5 g for PV greater than 1, and at 10 g for PV less than or equal to 1, and to limit the applicability of this method to animal and vegetable fats and oils with peroxide values from 0 meq to 30 meq of active oxygen per kilogram. The user of this document should be aware that the results obtained can be slightly lower than with previous standards.

Animal and vegetable fats and oils — Determination of peroxide value — Iodometric (visual) endpoint determination

1 Scope

This document specifies a method for the iodometric determination of the peroxide value of animal and vegetable fats and oils with a visual endpoint detection. The peroxide value is a measure of the amount of oxygen chemically bound to an oil or fat as peroxides, particularly hydroperoxides.

The method is applicable to all animal and vegetable fats and oils, fatty acids and their mixtures with peroxide values from 0 meq to 30 meq (milliequivalents) of active oxygen per kilogram. It is also applicable to margarines and fat spreads with varying water content. The method is not suitable for milk fats and is not applicable to lecithins.

It is to be noted that the peroxide value is a dynamic parameter, whose value is dependent upon the history of the sample. Furthermore, the determination of the peroxide value is a highly empirical procedure and the value obtained depends on the sample mass. It is stressed that, due to the prescribed sample mass, the peroxide values obtained can be slightly lower than those obtained with a lower sample mass.

Milk and milk products (or fat coming from milk and milk products) are excluded from the scope of this document.

NOTE 1 A preferred method for the iodometric determination of the peroxide value for milk fats is specified in ISO 3976.

NOTE 2 A method for the potentiometric determination of the peroxide value is given in ISO 27107.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp/>