

Fat and oil derivatives - Fatty Acid Methyl Esters  
(FAME) - Determination of iodine value

## EESTI STANDARDI EESSÕNA

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ICS 67.200.10

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English Version

## Fat and oil derivatives - Fatty Acid Methyl Esters (FAME) - Determination of iodine value

Produits dérivés des corps gras - Esters méthyliques  
d'acides gras (EMAG) - Détermination de l'indice d'iode

Erzeugnisse aus pflanzlichen und tierischen Fetten und  
Ölen - Fettsäure-Methylester (FAME) - Bestimmung  
der Iodzahl

This European Standard was approved by CEN on 23 April 2022.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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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 14111:2022) has been prepared 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of an identical text or by endorsement, at the latest by December 2022, and conflicting national standards shall be withdrawn at the latest by December 2022.

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

This document supersedes EN 14111:2003.

In comparison with the previous edition, the following technical modifications have been made:

- glass weighing scoops should no longer be inserted into the flask.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

## Introduction

This document is based on EN ISO 3961 [1] which was specifically adapted for the determination of iodine value of Fatty Acid Methyl Esters (FAME).

This document is a preview generated by EVS

## 1 Scope

This document specifies a titrimetric method for the determination of iodine value in Fatty Acid Methyl Esters, hereinafter referred as FAME.

The precision statement of this test method was determined in a Round Robin exercise with iodine values in the range 111 g iodine/100 g to 129 g iodine/100 g.

The test method is also applicable for lower iodine values; however, the precision statement is not established for iodine values below 111 g iodine/100 g.

**WARNING** — The use of this document can involve hazardous materials, operations and equipment. This document does not purport to address all of the safety problems associated with its use. It is the responsibility of users of this document to take appropriate measures to ensure the safety and health of personnel prior to the application of the document, and to determine the applicability of any other restrictions for this purpose.

## 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.

EN ISO 661, *Animal and vegetable fats and oils - Preparation of test sample (ISO 661)*

EN ISO 3170, *Petroleum liquids - Manual sampling (ISO 3170)*

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696)*

EN ISO 5555, *Animal and vegetable fats and oils - Sampling (ISO 5555)*

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

### 3.1

#### iodine value

mass of iodine, absorbed by the test portion when determined in accordance with the procedure specified in this document, divided by the mass of the test portion

Note 1 to entry: The iodine value is reported as grams of iodine per 100 g of FAME.

## 4 Principle

A test portion is dissolved in a suitable solvent mixture and then Wijs reagent is added. After a specified time, potassium iodide and water are added to the sample and the liberated iodine is titrated using a sodium thiosulfate standardized solution.