

**Oil and fat derivatives - Fatty Acid
Methyl Esters (FAME) - Determination
of iodine value**

Oil and fat derivatives - Fatty Acid Methyl Esters
(FAME) - Determination of iodine value

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14111:2003 sisaldab Euroopa standardi EN 14111:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 06.06.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14111:2003 consists of the English text of the European standard EN 14111:2003.</p> <p>This document is endorsed on 06.06.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This European Standard specifies one titrimetric method for the determination of iodine value in Fatty Acid Methyl Esters, hereinafter referred as FAME.</p>	<p>Scope: This European Standard specifies one titrimetric method for the determination of iodine value in Fatty Acid Methyl Esters, hereinafter referred as FAME.</p>
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ICS 67.200.10

Võtmesõnad: analysis, chemical analysis and testin, content, definitions, derivative of oil, determination, determination of content, fats, fatty acids, food products, iodine, liquid, methyl esters, oils, testing, value analysis, value of material, vegetable oils

ICS 67.200.10

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 2 January 2003.

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 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 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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Foreword

This document (EN 14111:2003) 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 October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

This document has been prepared under Mandate M/245 on Fatty Acid Methyl ester (FAME) given to CEN by the European Commission and the European Free Trade Association.

Annex A is informative.

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

Introduction

This European Standard is based on the EN ISO 3961 [1] which was specifically adapted for the determination of iodine value of fatty acid methyl esters (FAME).

1 Scope

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

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 661:1995, *Animal and vegetable fats and oils — Preparation of test sample (ISO 661:1989)*.

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*.

3 Terms and definitions

For the purposes of this European Standard, the following term and definition apply.

3.1 iodine value

mass of halogen, expressed as iodine, absorbed by the test portion when determined in accordance with the procedure specified in this European Standard, divided by the mass of the test portion

Iodine value is reported as grams of iodine per 100 g of FAME.

4 Principle

A test portion is dissolved in a mixed solvent 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.

5 Reagents

Use only reagents of recognised analytical grade and water of grade 3 in accordance with EN ISO 3696.

5.1 Potassium iodide (KI), 100 g/l aqueous solution free from iodate and iodine.

5.2 Starch solution

Mix 5 g of soluble starch in 30 ml of water and add to 1 000 ml of boiling water. Boil for 3 min and let stand to cool.

5.3 Sodium thiosulfate, standard volumetric solution in water, $c(\text{Na}_2\text{S}_2\text{O}_3 \bullet 5\text{H}_2\text{O}) = 0,1 \text{ mol/l}$ standardized not more than seven days before use.

5.4 Solvent, prepared by mixing equal volumes of cyclohexane and glacial acetic acid.

5.5 Wijs reagent, containing iodine monochloride in acetic acid.

The I/Cl ratio of Wijs reagent shall be within the limits $1,10 \pm 0,1$.

NOTE Commercially available Wijs reagent can be used.