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Vedelad naftasaadused. Kütuste keskmistest destillaatidest rasvhapete metüülestrite (FAME) eraldamine ja iseloomustamine. Vedelikkromatograafia (LC) / gaaskromatograafia (GC) meetod

Liquid petroleum products - Separation and characterisation of fatty acid methyl esters (FAME) by liquid chromatography/gas chromatography (LC/GC)

EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14331:2004 sisaldab Euroopa standardi EN 14331:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 27.07.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 14331:2004 consists of the English text of the European standard EN 14331:2004. This document is endorsed on 27.07.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This European Standard specifies a method for the separation of fatty acid methyl esters (FAME) from middle distillates by liquid chromatography (LC) and for quantitative determination of the individual esters by gas chromatography (GC). This method is applicable to FAME of vegetable or animal origin that contain methyl esters between C14 to C24. These FAME are mainly composed of C16 - C18 esters from fatty acids. This method is applicable whatever the origin of the middle distillate.	**Scope:** This European Standard specifies a method for the separation of fatty acid methyl esters (FAME) from middle distillates by liquid chromatography (LC) and for quantitative determination of the individual esters by gas chromatography (GC). This method is applicable to FAME of vegetable or animal origin that contain methyl esters between C14 to C24. These FAME are mainly composed of C16 - C18 esters from fatty acids. This method is applicable whatever the origin of the middle distillate.

ICS 75.080

Võtmesõnad: chemical analysis and testin, fatty, fatty acids, gas chromatography, gas-liquid chromatography, liquid chromatography, liquid materials, lubricating oils, materials testing, mineral oils, petroleum products, sampling, sampling methods, test equipment, testing

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Eesti Standardikeskusele kuulub standardite reprodutseerimis- ja levitamisõigus

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14331

March 2004

ICS 75.080

English version

Liquid petroleum products - Separation and characterisation of fatty acid methyl esters (FAME) from middle distillates - Liquid chromatography (LC)/gas chromatography (GC) method

Produits pétroliers liquides - Séparation et caractérisation des esters méthyliques d'acides gras (EMAG) dans les distillats moyens - Méthode par chromatographie liquide (CL) et chromatographie en phase gazeuse (CPG)

Flüssige Mineralölerzeugnisse - Trennung und Bestimmung von Fettsäure-Methylestern (FAME) aus Mitteldestillaten - Flüssigchromatographie (LC)/Gaschromatographie (GC)

This European Standard was approved by CEN on 16 January 2004.

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.

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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

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Foreword

This document (EN 14331:2004) has been prepared by Technical Committee CEN /TC 19 "Petroleum products, lubricants and related products", the secretariat of which is held by NEN.

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 2004, and conflicting national standards shall be withdrawn at the latest by September 2004.

Annex A is normative. Annexes B and C are informative.

This document includes a Bibliography.

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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1 Scope

This European Standard specifies a method for the separation of fatty acid methyl esters (FAME) from middle distillates by liquid chromatography (LC) and for quantitative determination of the individual esters by gas chromatography (GC).

This method is applicable to FAME of vegetable or animal origin that contain methyl esters between C_{14} to C_{24}. These FAME are mainly composed of C_{16} - C_{18} esters from fatty acids. This method is applicable whatever the origin of the middle distillate.

This test method has been evaluated for the separation and characterisation of FAME present at up to 5 % *(V/V)* in middle distillate.

NOTE For the purposes of this European Standard, the terms "% (*m/m*)" and "% (*V/V*)" are used to represent respectively the mass fraction and the volume fraction.

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 3170, *Petroleum liquids - Manual sampling (ISO 3170:1988, including Amendment 1:1998)*.

EN ISO 3171, *Petroleum liquids - Automatic pipeline sampling (ISO 3171:1988)*.

EN ISO 5508*, Animal and vegetable fats and oils - Analysis by gas chromatography of methyl esters of fatty acids (ISO 5508:1990).*

3 Principle

The method consists of two stages:

— separation of the FAME fraction from the middle distillate by liquid adsorption chromatography at atmospheric pressure on a silica micro-column;

— characterization of the separated FAME fraction by gas chromatography.

4 Reagents and materials

4.1 Hexane, HPLC analytical grade.

4.2 Diethyl ether, HPLC analytical grade.

5 Apparatus

5.1 General

General gas chromatographic and liquid chromatographic equipment shall be used.

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