

Mootorikütused. Diislikütus. Nõuded ja katsemeetodid

Automotive fuels - Diesel - Requirements and test methods

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 590:2013 sisaldab Euroopa standardi EN 590:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 590:2013 consists of the English text of the European standard EN 590:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 11.09.2013.	Date of Availability of the European standard is 11.09.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 75.160.20

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

English Version

Automotive fuels - Diesel - Requirements and test methods

Carburants pour automobiles - Carburants pour moteur
diesel (gazole) - Exigences et méthodes d'essai

Kraftstoffe für Kraftfahrzeuge - Dieseldiesellost -
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 26 July 2013.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Sampling	6
4 Pump marking	6
5 Requirements and test methods	6
5.1 Dyes and markers	6
5.2 Additives	6
5.2.1 General	6
5.2.2 Methylcyclopentadienyl manganese tricarbonyl (MMT)	6
5.3 Fatty acid methyl ester (FAME)	6
5.4 Other (bio-) components	7
5.5 Generally applicable requirements and related test methods	7
5.6 Climate dependent requirements and related test methods	9
5.7 Precision and dispute	10
Annex A (normative) Details of inter-laboratory test programme.....	11
Bibliography	12

Foreword

This document (EN 590:2013) has been prepared by Technical Committee CEN/TC 19 “Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin”, 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 March 2014, and conflicting national standards shall be withdrawn at the latest by March 2014.

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 590:2009+A1:2010.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association [5].

The requirements of the European Fuels Directive 98/70/EC [1], including amendments 2003/17/EC [2], 2009/30/EC [3] and 2011/63/EC [4], have been included. Dates are included with all normative test method references in order to comply with the requirements of the European Commission; with the accompanying assurance by CEN/TC 19 that any referenced updated versions will always give similar accuracy and the same or better precision (see [4]).

Significant technical changes between this European Standard and the previous edition are:

- Inclusion of the revised EN 14214 FAME specification.
- Specific requirements concerning the limitation of use of methylcyclopentadienyl manganese tricarbonyl (MMT) as required by the EC have been incorporated.
- Addition of the Fuel Ignition Tester (EN 16144) as an alternate test method to the CFR engine test.
- Addition of Simulated Distillation by gas chromatography (GC), EN ISO 3924, as an alternate test method to distillation by EN ISO 3405.
- Introduction of the improved EDXRF determination technique for low sulfur contents, EN ISO 13032, in replacement of EN ISO 20847.

Annex A is normative and contains the precision data generated on the test methods, which are the result of inter-laboratory testing, carried out by working groups of CEN/TC 19. Many of the test methods included in this standard were the subject of inter-laboratory testing to determine the applicability of the method and its precision in relation to blends of automotive diesel fuel containing 10 % (V/V) or higher of different sources of fatty acid methyl esters (FAME).

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, 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.

1 Scope

This European Standard specifies requirements and test methods for marketed and delivered automotive diesel fuel. It is applicable to automotive diesel fuel for use in diesel engine vehicles designed to run on automotive diesel fuel containing up to 7,0 % (V/V) Fatty Acid Methyl Ester.

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

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.

EN 116:1997¹⁾, *Diesel and domestic heating fuels - Determination of cold filter plugging point*

prEN 12662:2012²⁾, *Liquid petroleum products - Determination of total contamination in middle distillates, diesel fuels and fatty acid methyl esters*

EN 12916:2006¹⁾, *Petroleum products - Determination of aromatic hydrocarbon types in middle distillates - High performance liquid chromatography method with refractive index detection*

EN 14078:2009¹⁾, *Liquid petroleum products - Determination of fatty acid methyl ester (FAME) content in middle distillates - Infrared spectrometry method*

EN 14214:2012³⁾, *Liquid petroleum products - Fatty acid methyl esters (FAME) for use in diesel engines and heating applications - Requirements and test methods*

EN 15195:2007¹⁾, *Liquid petroleum products - Determination of ignition delay and derived cetane number (DCN) of middle distillate fuels by combustion in a constant volume chamber*

EN 15751:2009¹⁾, *Automotive fuels - Fatty acid methyl ester (FAME) fuel and blends with diesel fuel - Determination of oxidation stability by accelerated oxidation method*

EN 16144:2012, *Liquid petroleum products - Determination of ignition delay and derived cetane number (DCN) of middle distillate fuels - Fixed range injection period, constant volume combustion chamber method*

EN 16329:2013, *Diesel and domestic heating fuels - Determination of cold filter plugging point - Linear cooling bath method*

prEN 16576:2013²⁾, *Automotive fuels - Determination of manganese and iron content in middle distillate fuels - Inductively coupled plasma optical emission spectrometry (ICP OES) method*

EN 23015:1994, *Petroleum products - Determination of cloud point (ISO 3015:1992)*

EN ISO 2160:1998, *Petroleum products - Corrosiveness to copper - Copper strip test (ISO 2160:1998)*

EN ISO 2719:2002, *Determination of flash point - Pensky-Martens closed cup method (ISO 2719:2002)*

1) Under revision.

2) In preparation.

3) This document is currently impacted by EN 14214:2012/FprA1:2013.

EN ISO 3104:1996, *Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity (ISO 3104:1994)*

EN ISO 3170:2004, *Petroleum liquids - Manual sampling (ISO 3170:2004)*

EN ISO 3171:1999¹⁾, *Petroleum liquids - Automatic pipeline sampling (ISO 3171:1988)*

EN ISO 3405:2011, *Petroleum products - Determination of distillation characteristics at atmospheric pressure (ISO 3405:2011)*

EN ISO 3675:1998, *Crude petroleum and liquid petroleum products - Laboratory determination of density - Hydrometer method (ISO 3675:1998)*

EN ISO 3924:2010, *Petroleum products - Determination of boiling range distribution - Gas chromatography method (ISO 3924:2010)*

EN ISO 4259:2006, *Petroleum products - Determination and application of precision data in relation to methods of test (ISO 4259:2006)*

EN ISO 4264:2007⁴⁾, *Petroleum products - Calculation of cetane index of middle-distillate fuels by the four-variable equation (ISO 4264:2007)*

EN ISO 5165:1998¹⁾, *Petroleum products - Determination of the ignition quality of diesel fuels - Cetane engine method (ISO 5165:1998)*

EN ISO 6245:2002, *Petroleum products - Determination of ash (ISO 6245:2001)*

EN ISO 10370:1995, *Petroleum products - Determination of carbon residue - Micro method (ISO 10370:1993)*

EN ISO 12156-1:2006, *Diesel fuel - Assessment of lubricity using the high-frequency reciprocating rig (HFRR) - Part 1: Test method (ISO 12156-1:2006)*

EN ISO 12185:1996, *Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method (ISO 12185:1996)*

EN ISO 12205:1996, *Petroleum products - Determination of the oxidation stability of middle-distillate fuels (ISO 12205:1995)*

EN ISO 12937:2000, *Petroleum products - Determination of water - Coulometric Karl Fischer titration method (ISO 12937:2000)*

EN ISO 13032:2012, *Petroleum products - Determination of low concentration of sulfur in automotive fuels - Energy-dispersive X-ray fluorescence spectrometric method (ISO 13032:2012)*

EN ISO 13759:1996, *Petroleum products - Determination of alkyl nitrate in diesel fuels - Spectrometric method (ISO 13759:1996)*

EN ISO 20846:2011, *Petroleum products - Determination of sulfur content of automotive fuels - Ultraviolet fluorescence method (ISO 20846:2011)*

EN ISO 20884:2011, *Petroleum products - Determination of sulfur content of automotive fuels - Wavelength-dispersive X-ray fluorescence spectrometry (ISO 20884:2011)*

4) This document is currently impacted by EN ISO 4264:2007/A1:2013.