BSI Standards Publication

# Automotive fuels — Diesel — Requirements and test methods

# National foreword

This British Standard is the UK implementation of EN 590:2025. It supersedes BS EN 590:2022, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PTI/2, Liquid Fuels.

A list of organizations represented on this committee can be obtained on request to its committee manager.

This standard is applicable to diesel fuel used in compression ignition engines for on-road vehicles. It is also applicable to diesel fuel used in non-road mobile machinery and stationary compression ignition engines, operated in agricultural, forestry, domestic and industrial applications.

The UK committee draws users' attention to National Annexes NA, NB and NC, which provide further guidance to assist users in the application of this standard.

National Annex NA (normative) gives the national sampling requirements for automotive diesel fuel to comply with Clause 4.

National Annex NB (normative) gives the pump marking requirements for automotive diesel fuel to comply with Clause 5 and Subclause 6.2.2.

National Annex NC (normative) gives climate-dependent requirements for automotive diesel fuel to comply with Subclause 6.7.2.

Regarding the Fatty Acid Methyl Ester (FAME) content of motor fuels sold and distributed in the UK, the UK committee draws users' attention to UK Statutory Instrument 2021 No. 894, *The Motor Fuel (Composition and Content) and the Biofuel (Labelling) (Amendment) (No. 2) Regulations 2021*, which states FAME 'must comply with BS EN 14214:2012' (see Table 2 of Schedule AA1). To comply with the requirements of this standard, the UK committee notes that FAME is required to comply with the requirements of BS EN 14214:2012+A2:2019.

Significant technical changes between the National Annexes of this standard and those of the previous edition BS EN 590:2022 are:

— withdrawal of the requirement for Ambient Filter Blocking Tendency

— withdrawal of the requirement for automotive diesel fuel to have a maximum cloud point of -5 °C

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Published by BSI Standards Limited 2026

ISBN 978 0 539 31336 9

ICS 75.160.20



This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2026.

**Amendments/corrigenda issued since publication**

| Date | Text affected |
|---|---|

EUROPEAN STANDARD **EN 590**

NORME EUROPÉENNE

# EUROPÄISCHE NORM

July 2025

ICS 75.160.20

Supersedes EN 590:2022

English Version

# Automotive fuels - Diesel - Requirements and test methods

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

Kraftstoffe - Dieselkraftstoff - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 6 July 2025.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN 590:2025 E

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## European foreword

This document (EN 590:2025) 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 January 2026, and conflicting national standards shall be withdrawn at the latest by January 2026.

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 590:2022.

This document has originally been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association [9].

Requirements following amendments 2003/17/EC [2], 2009/30/EC [3], 2011/63/EU [4], 2014/77/EU [5], 2015/1513/EC [6], 2018/1999/EU [7] and 2023/2413/EU [8] to the European Fuels Quality Directive 98/70/EC [1], are taken into account. Dates are included with all normative test method references for properties required by Annex II of the Fuels Quality Directive 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]).

The marking at the pump of this product is in line with the requirements of the Fuels Quality Directive and the Alternative Fuels Infrastructure Regulation [10].

Further significant technical changes between this document and the previous edition EN 590:2022 are:

— introduction of new definitions in Clause 3 “Terms and definitions”;

— inclusion of a particle count limit of 10 000 counts/ml for particles ≥ 4 µm at “the point of particle certification” in a new Table 2 and 6.5;

— introduction of test method IP 630 procedures A and B to measure the number of particles ≥ 4 µm in diesel fuel;

— addition of the constant pressure viscometer method (EN ISO 18335) as an alternative test method to EN ISO 3104 for the determination of viscosity;

— reduction of the minimum density for summer grades (A, B, C) from 820,0 kg/m$^3$ to 815,0 kg/m$^3$ and displacement of the parameter to Table 1;

— addition of Annex A “Further information regarding particle count requirements”.

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, Türkiye and the United Kingdom.

# 1 Scope

This document 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 (FAME).

NOTE For the purposes of this document, 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 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 116, *Diesel and domestic heating fuels — Determination of cold filter plugging point — Stepwise cooling bath method*

EN 12662-1, *Liquid petroleum products — Determination of total contamination — Part 1: Middle distillates and diesel fuels*

EN 12916:2024, *Petroleum products — Determination of aromatic hydrocarbon types in middle distillates — High performance liquid chromatography method with refractive index detection*

EN 14078:2014, *Liquid petroleum products — Determination of fatty acid methyl ester (FAME) content in middle distillates — Infrared spectrometry method*

FprEN 14214:2024, *Liquid petroleum products — Fatty acid methyl esters (FAME) for use in diesel engines and heating applications — Requirements and test methods*

EN 15195:2023, *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, *Automotive fuels — Fatty acid methyl ester (FAME) fuel and blends with diesel fuel — Determination of oxidation stability by accelerated oxidation method*

EN 16091, *Liquid petroleum products — Middle distillates and fatty acid methyl ester (FAME) fuels and blends — Determination of oxidation stability by rapid small scale oxidation test (RSSOT)*

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

EN 16576:2014, *Automotive fuels — Determination of manganese and iron content in diesel — Inductively coupled plasma optical emission spectrometry (ICP OES) method*

EN 16715:2015, *Liquid petroleum products — Determination of ignition delay and derived cetane number (DCN) of middle distillate fuels — Ignition delay and combustion delay determination using a constant volume combustion chamber with direct fuel injection*

EN 16906:2023, *Liquid petroleum products — Determination of the ignition quality of diesel fuels — Fixed compression ratio engine method*

EN 16942, *Fuels — Identification of vehicle compatibility — Graphical expression for consumer information*