Liquid petroleum products - Determination of total contamination - Part 1: Middle distillates and diesel fuels

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NATIONAL FOREWORD

See Eesti standard EVS-EN 12662-1:2024 sisaldab Euroopa standardi EN 12662-1:2024 ingliskeelset teksti.	This Estonian standard EVS-EN 12662-1:2024 consists of the English text of the European standard EN 12662-1:2024.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 05.06.2024.	Date of Availability of the European standard is 05.06.2024.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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

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Liquid petroleum products - Determination of total contamination - Part 1: Middle distillates and diesel fuels

Produits pétroliers liquides - Détermination de la contamination totale - Partie 1 : Distillats moyens et gazoles

Flüssige Mineralölerzeugnisse - Bestimmung der Gesamtverschmutzung - Teil 1: Mitteldestillate und Dieselkraftstoffe

This European Standard was approved by CEN on 8 April 2024.

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European foreword

This document (EN 12662-1:2024) 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of an identical text or by endorsement, at the latest by December 2024, and conflicting national standards shall be withdrawn at the latest by December 2024.

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 12662:2014.

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

— split of the scope of the previous edition in two parts, with Part 1 covering the middle distillates and the diesel fuels containing up to 30 % (*V*/*V*) of fatty acid methyl ester (FAME) in this document and with Part 2 covering the neat FAME in a separated document;

— update of the precision data following a new statistical analysis [6] of the interlaboratory tests data available without the FAME samples according to EN ISO 4259-1:2017 [4].

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.

Introduction

Excessive contamination in a fuel system can give rise to premature blocking of filters and/or hardware failure, and is therefore undesirable. The determination of the content of undissolved substances, referred to as total contamination, is a way to control this issue.

In the previous version of this method, the scope was covering middle distillates, diesel fuels containing up to 30 % (*V*/*V*) of FAME and neat FAME. It was found that the improvement sought in 2014, give problems in the lab in testing FAME and correlate the results to those obtained with the previous version of the method. A solution has been found, which resulted in splitting the methodology in two parts: to include the previous version as Part 1 and to develop a separate standard for neat FAME as Part 2.

1 Scope

This document specifies a method for the determination of the content of undissolved substances, referred to as total contamination, in middle distillates, in diesel fuels containing up to 30 % (V/V) fatty acid methyl esters (FAME). The working range is from 12 mg/kg to 26 mg/kg and it was established in an interlaboratory study by applying EN ISO 4259-1 [4].

This document in general is applicable to products having a kinematic viscosity not exceeding 8 mm^2/s at 20 °C, or 5 mm^2/s at 40 °C.

This test method can be used for paraffinic diesel fuels as specified in EN 15940, for diesel fuels containing more than 30 % (V/V) FAME and for petroleum products having a kinematic viscosity exceeding 8 mm^2/s at 20 °C, or 5 mm^2/s at 40 °C, however in such cases the precision of the test method has not been determined.

NOTE For the purposes of this document, the term "% (V/V)" is used to represent the volume fraction, φ, of a material.

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 the user of this document to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

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 14275, *Automotive fuels — Assessment of petrol and diesel fuel quality — Sampling from retail site pumps and commercial site fuel dispensers*

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

EN ISO 3171, *Petroleum liquids — Automatic pipeline sampling (ISO 3171)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org

3.1
total contamination
undissolved substances retained on a filter after filtration under test conditions

3.2
absolute pressure
pressure measured relative to zero pressure or a total vacuum