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Petroleum products and related materials - Determination of hydrocarbon types - Fluorescent indicator adsorption method

EESTI STANDARDI EESSÕNA

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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 08.12.2021.	Date of Availability of the European standard is 08.12.2021.
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ICS 75.080

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15553

December 2021

ICS 75.080

Supersedes EN 15553:2007

English Version

Petroleum products and related materials - Determination of hydrocarbon types - Fluorescent indicator adsorption method

Produits pétroliers et produits connexes - Détermination des groupes d'hydrocarbures - Méthode par adsorption en présence d'indicateur fluorescent

Mineralölerzeugnisse und verwandte Produkte - Bestimmung der Kohlenwasserstofftypen - Adsorptionsverfahren mit Fluoreszenz-Indikator

This European Standard was approved by CEN on 28 October 2021.

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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.

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

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European foreword

This document (EN 15553:2021) 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 document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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 15553:2007. It is originally based on IP 156/06 [1]. It is intended as an alternative method to ASTM D1319 [2], which requires a de-pentanization step.

In comparison with the previous edition, the following technical modification has been made:

— lot numbers of the to be used reformulated dyed gel (5.2) that are questionable in their use have been excluded and clarification of correct references to the gel have been included.

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, Turkey and the United Kingdom.

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1 Scope

This document specifies a fluorescent indicator adsorption method for the determination of hydrocarbon types over the concentration ranges from 5 % (*V/V*) to 99 % (*V/V*) aromatic hydrocarbons, 0,3 % (*V/V*) to 55 % (*V/V)* olefins, and 1 % (*V/V)* to 95 % (*V/V*) saturated hydrocarbons in petroleum fractions that distil below 315 °C. This method can apply to concentrations outside these ranges, but the precision has not been determined.

When samples containing oxygenated blending components are analysed, the hydrocarbon type results can be reported on an oxygenate-free basis or, when the oxygenate content is known, the results can be corrected to a total-sample basis.

This test method is applicable to full boiling range products. Cooperative data have established that the precision statement does not apply to petroleum fractions with narrow boiling ranges near the 315 °C limit. Such samples are not eluted properly, and results are erratic.

It does not apply to samples containing dark-coloured components that interfere with reading the chromatographic bands that cannot be analysed.

NOTE 1 The oxygenated blending components methanol, ethanol, *tert*-butyl methyl ether (MTBE), methyl *tert*-pentyl ether *(TAME)* and *tert*-butyl ethyl ether (ETBE) do not interfere with the determination of hydrocarbon types at concentrations normally found in commercial petroleum blends. These oxygenated compounds are not detected since they elute with the alcohol desorbent. The effects of other oxygenated compounds are individually verified.

NOTE 2 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.

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 1601, *Liquid petroleum products - Determination of organic oxygenate compounds and total organically bound oxygen content in unleaded petrol - Method by gas chromatography (O-FID)*

EN 13132, *Liquid petroleum products - Unleaded petrol - Determination of organic oxygenate compounds and total organically bound oxygen content by gas chromatography using column switching*

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

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

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696)*

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