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I.S. EN 15553:2007

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PETROLEUM PRODUCTS AND RELATED MATERIALS - DETERMINATION OF HYDROCARBON TYPES - FLUORESCENT INDICATOR ADSORPTION METHOD

This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on:
28 May 2007

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15553

April 2007

ICS 75.080

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 24 February 2007.

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Contents

Page

Foreword 3
1 Scope 4
2 Normative references 4
3 Terms and definitions 5
4 Principle 5
5 Reagents and materials 5
6 Apparatus 6
7 Sampling and sample handling 9
8 Apparatus preparation 9
9 Procedure 10
10 Calculation 12
11 Expression of results 13
12 Precision 13
12.1 Repeatability, *r* 13
12.2 Reproducibility, *R* 13
13 Test report 15
Annex A (normative) **Specification for silica gel** 16
Annex B (informative) **Standard adsorption column** 17
Bibliography 19

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Foreword

This document (EN 15553:2007) 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of an identical text or by endorsement, at the latest by October 2007, and conflicting national standards shall be withdrawn at the latest by October 2007.

This European Standard is based on IP 156/06 [1]. It is developed as an alternative method to ASTM D1319 [2], in which a de-pentanization step is described, which is not used in this European Standard and the EU environment.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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1 Scope

This European Standard 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)* olefinic hydrocarbons, and 1 % (*V/V)* to 95 % (*V/V*) saturated hydrocarbons in petroleum fractions that distil below 315 ºC. This method may be applicable 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 for use with 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.

Samples containing dark-coloured components that interfere with reading the chromatographic bands 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 blends. These oxygenated compounds are not detected since they elute with the alcohol desorbent. The effects of other oxygenated compounds should be individually verified.

NOTE 2 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.

WARNING — The use of this European Standard may involve hazardous materials, operations and equipment. This European Standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2 Normative references

The following referenced documents are indispensable for the application 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 — Unleaded petrol — Determination of organic oxygenate compounds and total organically bound oxygen content 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 3170:2004)*

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

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

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