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Automotive fuels — Determination of high-boiling components including fatty acid methyl esters in petrol — Gas chromatographic method

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EUROPEAN STANDARD
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EN 16270

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English Version

**Automotive fuels - Determination of high-boiling components
including fatty acid methyl esters in petrol - Gas
chromatographic method**

Carburants pour automobiles - Détermination des
composés à haut point d'ébullition dont les esters
méthylliques d'acides gras dans l'essence - Méthode par
chromatographie en phase gazeuse

Kraftstoffe für Kraftfahrzeuge - Bestimmung hochsiedender
Komponenten einschließlich Fettsäure-Methylester in
Ottokraftstoff - Gaschromatographisches Verfahren

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Foreword

This document (EN 16270:2012) 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of an identical text or by endorsement, at the latest by March 2013, and conflicting national standards shall be withdrawn at the latest by March 2013.

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1 Scope

This European Standard specifies a determination method of high boiling components in petrol according to EN 228 [1] by capillary gas chromatography using flame ionisation detection. This method is applicable to high boiling material, such as fatty acid methyl ester (FAME) or diesel fuel, having a boiling point greater than or equal to 1-methyl-naphthalene.

This European Standard is applicable to materials having a vapour pressure low enough to permit sampling at ambient temperature and a boiling range of at least 100 °C. This method pays special attention to fatty acid methyl esters.

The measurement range for the high boiling fraction is from 0,7 % (m/m) to 2,5 % (m/m). For the FAME fraction, the range is from 0,2 % (m/m) to 2 % (m/m).

NOTE 1 When calculating the FAME fraction, this method only takes the C18- methyl esters compounds into account.

NOTE 2 For the purposes of this standard, the terms “% (m/m)” and “% (V/V)” are used to represent the mass fraction (μ) and the volume fraction (φ) of a material respectively.

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

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.

3.1

start of high boiling fraction

first peak to be included in the high boiling fraction

Note 1 to entry: In this determination method, this is the peak of 1-methyl-naphthalene.

3.2

end of high boiling fraction

last peak to be included in the high boiling fraction

Note 1 to entry: In this determination method, this is the peak of dotriacontane (n-C32).