Ethanol as a blending component for petrol - Determination ofhigher alcohols, methanol and volatile impurities - Gaschromatographic method

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NATIONAL FOREWORD

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Ethanol zur Verwendung als Blendkomponente in Ottokraftstoff - Bestimmung von höheren Alkoholen, Methanol und flüchtigen Verunreinigungen - Gaschromatographisches Verfahren

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Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 15721:2009) 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of an identical text or by endorsement, at the latest by October 2009, and conflicting national standards shall be withdrawn at the latest by October 2009.

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Introduction

This document specifies a GC test method for the determination of a number of compounds present in ethanol for use as a blending component in petrol according to the CEN ethanol blending component specification EN 15376 [1]. The test method comprises of GC identification and analysis of a number of molecules, which are then attributed to several classes ("impurities", "methanol", "higher alcohols"), which are needed for calculation of the specified values as required in EN 15376.

The method described in this document was prepared by CEN/TC 19's Working Group 9 and is based on two methods ([2] and [3]) published from a European Regulation on wine and on other internationally published analytical methods on spirits [4]. The method is modified for determinations in ethanol for automotive applications.

1 Scope

This standard specifies a gas chromatographic method for ethanol, in which higher alcohols (propan-1-ol, butan-1-ol, butan-2-ol, 2-methylpropan-1-ol (isobutanol), 2-methylbutan-1-ol, and 3-methylbutan-1-ol) up to 2,5 % (*m/m*), methanol up to 3 % (*m/m*) and other volatile impurities, especially ethyl-ethanoate (ethyl acetate), ethanal (acetic aldehyde) and 1,1-diethoxyethane (acetal) in the range up to 2 % (*m/m*) are determined.

Due to possible interferences the method is not applicable to denatured ethanol samples.

NOTE For the purposes of this document, the term "% (*m/m*)" is used to represent the mass fraction of a material.

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 ISO 3170, *Petroleum liquids — Manual sampling (ISO 3170:2004)*

EN ISO 3696:1995, *Water for analytical laboratory use – Specification and test methods (ISO 3696:1987)*