TECHNICAL REPORT

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Liquid petroleum products - Determination of hydrocarbon types and oxygenates via multidimensional gas chromatography method - Round Robin research report

Produits pétroliers liquides - Détermination des groupes d'hydrocarbures et de la teneur en composés oxygénés par méthode par chromatrographie multidimensionnelle en phase gazeuse - Rapport de recherche interlaboratoires

Flüssige Mineralölerzeugnisse - Bestimmung der Kohlenwasserstoffgruppen und sauerstoffhaltigen Verbindungen mit multidimensionalen gaschromatographischen Verfahren - Round Robin Forschungsbericht

This Technical Report was approved by CEN on 30 March 2008. It has been drawn up by the Technical Committee CEN/TC 19.

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Foreword

This document (CEN/TR 15745:2008) 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.

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Introduction

In 2004, the company AC Analytical Controls [1] conducted a Performance Monitoring Program on the AC Reformulyzer™. This is a kind of crosscheck program where customers analyse samples distributed by the company and then report the analysis results. The company checks the analytical performance of the instruments, keeping in mind the possible analytical errors that can occur. Because raw data are reported (chromatogram and data for each carbon number/group), a detailed review can be made. The company informs a customer when the instrument performance is inadequate and where possible provides information and instructions to improve the performance.

The intention was to get a precision statement for oxygenates that were not included in EN 14517, but that are listed in EN 228. Besides this, the performance for other properties (aromatics, olefins, benzene) has been determined.

More information on the review of the data is available from the monitoring, but this technical report focuses on oxygenates. Results for other properties (aromatics, olefins, benzene) are listed in the tables but are not discussed in detail here. Also the evaluation for outliers is done on oxygenates only, not on the other properties.

[1] Postal address: P.O. Box 10054, 3004 AB Rotterdam, The Netherlands, E-mail: acbv@analytical-controls.com, Web: www.analytical-controls.com.

1 Scope

This Technical Report presents the study on the application of EN 14517 to other oxygenates. This report supports an extension of the scope of the method, which has been explicitly requested by ISO/TC 28 at the time of revision of EN 14517 and was agreed to result in the parallel Standard EN ISO 22854.

This report is published as background information to judge the approval of the use of the method for the determination of all oxygenates as mentioned in the European Fuels Directive. Next, this report should support the use of multidimensional chromatography as the method for disputes on oxygenates in EN 228.

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

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 4259, *Petroleum products - Determination and application of precision data in relation to methods of test (ISO 4259:2006)*

3 Participating labs

Labs that have participated in the 2005 to 2006 Round Robin work are mentioned in Table 1.

4 Sample set

The sample set as given in Table 2 has been used.