Ethanol as a blending component for petrol - Determination of inorganic chloride and sulfate content - Ion chromatographic method

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NATIONAL FOREWORD

See Eesti standard EVS-EN 15492:2012 sisaldab Euroopa standardi EN 15492:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 15492:2012 consists of the English text of the European standard EN 15492:2012.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.01.2012.	Date of Availability of the European standard is 18.01.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 71.080.60, 75.160.20

EUROPEAN STANDARD

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English Version

Ethanol as a blending component for petrol - Determination of inorganic chloride and sulfate content - Ion chromatographic method

Éthanol comme base de mélange à l'essence - Détermination de la teneur en chlorures minéraux et en sulfates - Méthode par chromatographie ionique

Ethanol zur Verwendung als Blendkomponente in Ottokraftstoff - Bestimmung des Gehaltes an anorganischem Chlor und Sulfat - Ionenchromatographie

This European Standard was approved by CEN on 26 November 2011.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Contents

Page

Foreword

This document (EN 15492:2012) 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of an identical text or by endorsement, at the latest by July 2012, and conflicting national standards shall be withdrawn at the latest by July 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15492:2008.

The method described in this document was originally based on a method from a European Regulation on wine [1]. This method has been developed and revised in 2008 to suit the needs as expressed in the ethanol specification (EN 15376:2011 [2]), also drafted by CEN/TC 19.

The precision and range of application for both inorganic chloride and sulfate have again been updated based on a second interlaboratory study done by CEN/TC 19/WG 27 on “Elemental analysis”. Small parts of the procedure have been updated according to laboratory practice and a density correction has been included in order to be able to report the result of the test in mass fraction.

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, Croatia, 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, Turkey and United Kingdom.

1 Scope

This European Standard specifies an ion chromatographic (IC) method for the determination of inorganic chloride content in ethanol from about 1 mg/kg to about 30 mg/kg and of sulfate content in ethanol from about 1 mg/kg to about 20 mg/kg.

NOTE Sulfate content can be determined from 0,5 mg/kg to 1,0 mg/kg. However, the precision was not established as no samples with sulfate content in this range were included in the interlaboratory test.

WARNING — Use of this method may involve hazardous equipment, materials and operations. This method does not purport to address to all of the safety problems associated with its use, but it is the responsibility of the user to search and 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 15486:2007, *Ethanol as a blending component for petrol — Determination of sulfur content — Ultraviolet fluorescence method*

EN ISO 1042, *Laboratory glassware — One-mark volumetric flasks (ISO 1042)*

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

EN ISO 3675, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method (ISO 3675)*

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

EN ISO 12185, *Crude petroleum and petroleum products — Determination of density — Oscillating U-tube method (ISO 12185)*

3 Principle

A test portion of ethanol sample is evaporated on a water bath. The dry residue is dissolved in water. The chloride and sulfate ion contents are determined by comparing the peak area in the chromatogram of the aqueous solution of the test portion with the curve of the calibration standards.

The calibration standards are prepared from suitable compounds in aqueous solution.

4 Reagents

Use only reagents of recognized analytical grade, such as “Ionic Chromatography grade”, unless otherwise specified.

4.1 Sodium chloride (NaCl), molar mass 58,44 g/mol.

4.2 Sulfuric acid (H_2SO_4), aqueous solution at 0,1 mol/l. The concentration of sulfuric acid shall be verified by titration, or shall be certified in case of commercially available product.