Ethanol as a blending component for petrol - Determination of sulphur content - Ultraviolet fluorescence method

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 15486:2007 sisaldab Euroopa standardi EN 15486:2007 ingliskeelset teksti. Käesolev dokument on jõustatud 30.10.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 15486:2007 consists of the English text of the European standard EN 15486:2007. This document is endorsed on 30.10.2007 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This document specifies an ultraviolet (UV) fluorescence test method for the determination of the sulfur content of ethanol from 5 mg/kg to 20 mg/kg. Other products may be analysed and higher sulfur contents may be determined according to this test method, however, no precision data for products other than ethanol and for results outside the specified range have been established for this document. Halogens interfere with this detection technique at concentrations above approximately 3 500 mg/kg.	**Scope:** This document specifies an ultraviolet (UV) fluorescence test method for the determination of the sulfur content of ethanol from 5 mg/kg to 20 mg/kg. Other products may be analysed and higher sulfur contents may be determined according to this test method, however, no precision data for products other than ethanol and for results outside the specified range have been established for this document. Halogens interfere with this detection technique at concentrations above approximately 3 500 mg/kg.

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Ethanol as a blending component for petrol - Determination of sulfur content - Ultraviolet fluorescence method

Ethanol comme base de mélange à l'essence - Dosage du soufre - Méthode par fluorescence ultraviolette

Ethanol zur Verwendung als Blendkomponente in Ottokraftstoff - Bestimmung des Schwefelgehaltes - Ultraviolettfluoreszenz-Verfahren

This European Standard was approved by CEN on 30 June 2007.

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

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Foreword

This document (EN 15486:2007) 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 February 2008, and conflicting national standards shall be withdrawn at the latest by February 2008.

The method described in this document is based on EN ISO 20846 [1].

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.

1 Scope

This document specifies an ultraviolet (UV) fluorescence test method for the determination of the sulfur content of ethanol from 5 mg/kg to 20 mg/kg. Other products may be analysed and higher sulfur contents may be determined according to this test method, however, no precision data for products other than ethanol and for results outside the specified range have been established for this document. Halogens interfere with this detection technique at concentrations above approximately 3 500 mg/kg.

NOTE For the purposes of this document, the terms "% (*m/m*)" and "% (*V/V*)" are used to represent the mass fraction and the volume fraction of a material respectively.

WARNING — The use of this standard may involve hazardous materials, operations and equipment. This 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 to 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 ISO 1042, *Laboratory glassware – one-mark volumetric flasks (ISO 1042:1998)*

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

3 Principle

An ethanol sample is directly injected into a UV fluorescence detector. The sample enters into a high temperature combustion tube (1 000 °C to 1 100 °C), where the sulfur is oxidized to sulfur dioxide (SO_2) in an oxygen-rich atmosphere. Water produced during the sample combustion is removed and the sample combustion gases are exposed to ultraviolet (UV) light. The SO_2 absorbs the energy from the UV light and is converted to excited sulfur dioxide (SO_2*). The fluorescence emitted from the excited SO_2* as it returns to a stable state SO_2, is detected by a photomultiplier tube and the resulting signal is a measure of the sulfur contained in the sample.

CAUTION — Exposure to excessive quantities of ultraviolet (UV) light is injurious to health. The operator must avoid exposing any part of his/her person, especially his/her eyes, to not only direct UV light but also to secondary or scattered radiation that may be present.

4 Reagents and materials

4.1 Inert gas

Argon or helium, high purity grade with a minimum purity of 99,998 % (*V/V*).

4.2 Oxygen

High purity grade with a minimum purity of 99,75 % (*V/V*).

CAUTION — Vigorously accelerates combustion.