This is a free page sample. Access the full version online.

National Standards Authority of Ireland

IRISH STANDARD

**I.S. EN 15485:2007**

ICS 71.080.60

# ETHANOL AS A BLENDING COMPONENT FOR PETROL - DETERMINATION OF SULFUR CONTENT - WAVELENGTH DISPERSIVE X-RAY FLUORESCENCE SPECTROMETRIC METHOD

National Standards
Authority of Ireland
Glasnevin, Dublin 9
Ireland

Tel: +353 1 807 3800
Fax: +353 1 807 3838
http://www.nsai.ie

**Sales**
http://www.standards.ie

*This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on:*
*21 September 2007*

**NO COPYING WITHOUT NSAI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW**

© **NSAI 2007**

**Price Code E**

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

*This page is intentionally left BLANK.*

This is a free page sample. Access the full version online.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 15485

August 2007

ICS 71.080.60

English Version

# Ethanol as a blending component for petrol - Determination of sulfur content - Wavelength dispersive X-ray fluorescence spectrometric method

Éthanol comme base de mélange à l'essence - Dosage du soufre - Méthode par fluorescence X dispersive en longueur d'onde

Ethanol zur Verwendung als Blendkomponente in Ottokraftstoff - Bestimmung des Schwefelgehaltes - Wellenlängendispersive Röntgenfluoreszenz-Spektrometrie (wdRFA)

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

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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.

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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

© 2007 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN 15485:2007: E

This is a free page sample. Access the full version online.



# Contents

Page

Foreword ..... 3
1 Scope ..... 4
2 Normative references ..... 4
3 Principle ..... 4
4 Reagents and materials ..... 4
5 Apparatus ..... 4
6 Samples and sampling ..... 5
7 Preparation of calibration solutions ..... 5
7.1 Blank calibration solution ..... 5
7.2 Stock solution ..... 5
7.3 Calibration solutions ..... 5
7.4 Storage and stability of the calibration solutions ..... 6
8 Settings ..... 6
8.1 Measuring parameters ..... 6
8.2 Optimization ..... 6
8.3 Performance check of the spectrometer ..... 6
9 Calibration ..... 6
9.1 General ..... 6
9.2 Calibration solutions ..... 7
9.3 Calibration curves ..... 7
9.4 Checking ..... 7
10 Procedure ..... 7
11 Expression of results ..... 8
12 Precision ..... 8
12.1 Repeatability ..... 8
12.2 Reproducibility ..... 8
13 Test report ..... 8
Bibliography ..... 9

This is a free page sample. Access the full version online.



# Foreword

This document (EN 15485:2007) 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 20884 [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.

This is a free page sample. Access the full version online.



# 1 Scope

This document specifies a wavelength-dispersive X-ray fluorescence (WDXRF) test method for the determination of the sulfur content of ethanol from 7 mg/kg to 20 mg/kg.

NOTE For the purposes of this European Standard, 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)*

# 3 Principle

The sample under analysis is exposed in a sample cell to the primary radiation of an X-ray tube. The count rates of the S-K$\alpha$ X-ray fluorescence and the count rate of the background radiation are measured. The sulfur content of the sample is determined from a calibration curve defined for the relevant measuring range.

NOTE Whilst the Siegbahn X-ray line notation (S-K$\alpha$) is used in this document, the corresponding IUPAC X-ray line notation is S K-$L_{2,3}$.

# 4 Reagents and materials

**4.1 Dibutylsulfide**, of nominal sulfur content 21,92 % (*m/m*), or

**4.2 Dibutyldisulfide,** of nominal sulfur content 35,95 % (*m/m*), used as a calibrating substance for sulfur.

**4.3 Ethanol absolute**, where the purity is not less than 99 %, for use as a blank solution, high purity grade, with a sulfur content < 1 mg/kg. Check the blank solution prior to use with the spectrometer (5.1). A signal for sulfur shall not be detectable.

# 5 Apparatus

**5.1 Wavelength dispersive X-ray fluorescence spectrometer**, with the capability for measuring the count rates of the S-K$\alpha$ X-ray fluorescence radiation and the background radiation. The minimum requirements for the spectrometer are given in Table 1.

SAI GLOBAL

This is a free preview.  Purchase the entire publication at the link below:

Product Page

Looking for additional Standards? Visit Intertek Inform Infostore

Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation