

**Petroleum products - Determination of  
sulfur content of automotive fuels - Energy-  
dispersive X-ray fluorescence spectrometry**

Petroleum products - Determination of sulfur content  
of automotive fuels - Energy-dispersive X-ray  
fluorescence spectrometry

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 20847:2004 sisaldab Euroopa standardi EN ISO 20847:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 27.07.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 20847:2004 consists of the English text of the European standard EN ISO 20847:2004.</p> <p>This document is endorsed on 27.07.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This International Standard specifies an energy dispersive X-ray fluorescence (EDXRF) test method for the determination of the sulfur content of motor gasolines, including those containing up to 2,7 % (m/m) oxygen, and of diesel fuels, including those containing up to 5 % (V/V) fatty acid methyl ester (FAME), having sulfur contents in the range 30 mg/kg to 500 mg/kg. Other products may be analysed and other sulfur contents may be determined according to this test method; however, no precision data for products other than automotive fuels and for results outside the specified range have been established for this International Standard.</p>	<p><b>Scope:</b></p> <p>This International Standard specifies an energy dispersive X-ray fluorescence (EDXRF) test method for the determination of the sulfur content of motor gasolines, including those containing up to 2,7 % (m/m) oxygen, and of diesel fuels, including those containing up to 5 % (V/V) fatty acid methyl ester (FAME), having sulfur contents in the range 30 mg/kg to 500 mg/kg. Other products may be analysed and other sulfur contents may be determined according to this test method; however, no precision data for products other than automotive fuels and for results outside the specified range have been established for this International Standard.</p>
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ICS 75.080, 75.160.30

Võtmesõnad:

ICS 75.080; 75.160.30

**English version**

Petroleum products

**Determination of sulfur content of automotive fuels**

Energy-dispersive X-ray fluorescence spectrometry  
(ISO 20847 : 2004)

Produits pétroliers – Détermination  
de la teneur en soufre des carburants  
pour automobiles – Spectrométrie de  
fluorescence de rayons X dispersive  
en énergie (ISO 20847 : 2004)

Mineralölerzeugnisse – Bestimmung  
des Schwefelgehaltes von Kraftstof-  
fen für Kraftfahrzeuge – Energiedis-  
persive Röntgenfluoreszenz-  
spektrometrie (ISO 20847 : 2004)

This European Standard was approved by CEN on 2004-03-01.

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 Management Centre or to any CEN member.

The European Standards exist 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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

## Foreword

International Standard

ISO 20847 : 2004 Petroleum products – Determination of sulfur content of automotive fuels – Energy-dispersive X-ray fluorescence spectrometry,

which was prepared by ISO/TC 28 'Petroleum products and lubricants' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 19 'Petroleum products and lubricants and related products', the Secretariat of which is held by NEN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by September 2004 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 20847 : 2004 was approved by CEN as a European Standard without any modification.

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## Introduction

This International Standard is directed specifically at the lower end of the concentration range covered in ISO 8754 ([3] in the Bibliography), which covers sulfur contents from 0,01 % (*m/m*) up to 5,00 % (*m/m*). By restriction of instrument type, a better signal to background ratio for sulfur K emission is assured and by the use of matrix matched calibration standards or other means of matrix corrections (as detailed below), the precision and accuracy of results for samples having varying C:H mass ratios and oxygen contents are improved. A knowledge of the general composition of the sample for analysis is advantageous in obtaining the best test result.

Where matrix matching is not used and where the C:H mass ratio of the test sample is known or can be determined, accuracy may be improved by the use of the equation given in A.2.2 to correct the result to the C:H mass ratio of the calibration standards, i.e. the reference diluent oil (4.1).

Some instruments include the capability for the separate measurement of scattered radiation from the X-ray tube, and notes for information are provided in A.2.3 on the use of this scattered radiation for compensation for matrix effects in the test sample.