

This document is a preview generated by EVS

Petroleum products - Determination of sulfur content -
Energy-dispersive X-ray fluorescence spectrometry
(ISO 8754:2025)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN ISO 8754:2025 sisaldab Euroopa standardi EN ISO 8754:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 27.08.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN ISO 8754:2025 consists of the English text of the European standard EN ISO 8754:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 27.08.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
--	---

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

ICS 75.080

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele. Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation: Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD

EN ISO 8754

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2025

ICS 75.080

Supersedes EN ISO 8754:2003

English Version

**Petroleum products - Determination of sulfur content -
Energy-dispersive X-ray fluorescence spectrometry (ISO
8754:2025)**

Produits pétroliers - Détermination de la teneur en
soufre - Spectrométrie de fluorescence de rayons X
dispersive en énergie (ISO 8754:2025)

Mineralölerzeugnisse - Bestimmung des
Schwefelgehaltes - Energiedispersive
Röntgenfluoreszenz-Spektrometrie (ISO 8754:2025)

This European Standard was approved by CEN on 19 May 2025.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 8754:2025) has been prepared by Technical Committee ISO/TC 28 "Petroleum and related products, fuels and lubricants from natural or synthetic sources" in collaboration with 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 2026, and conflicting national standards shall be withdrawn at the latest by February 2026.

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

This document supersedes EN ISO 8754:2003.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 8754:2025 has been approved by CEN as EN ISO 8754:2025 without any modification.

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Reagents and materials	1
6 Apparatus	2
7 Sampling	2
8 Apparatus preparation	3
8.1 Analyser.....	3
8.2 Sample cups.....	3
9 Calibration	3
9.1 General.....	3
9.2 Preparation of primary standards.....	3
9.3 Calibration standards.....	4
9.4 Storage of standards.....	4
9.5 Calibration procedure.....	5
9.6 Checking.....	5
9.6.1 Short-term checking.....	5
9.6.2 Long-term checking.....	5
10 Procedure	5
11 Calculation	5
12 Expression of results	5
13 Precision	6
13.1 General.....	6
13.2 Repeatability, r	6
13.3 Reproducibility, R	6
14 Test report	6
Annex A (informative) Matrix effects	7
Bibliography	9

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 19, *Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 8754:2003), which has been technically revised.

The main changes are as follows:

- the Scope has been expanded to biofuel and biofuel blends without precision statement;
- procedures for matrix corrections have been described in [A.3](#);
- [Clause 3](#) (Terms and definitions) has been added;
- Bibliography has been added.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

A specialized procedure, using the analytical technique described in this document, for automotive fuels with sulfur contents below 0,20 % mass fraction, is covered by ISO 13032.

This test method can be used for biofuel or biofuel blends. The correction of matrix effects with regards to oxygen content are described in [A.3](#). Biofuel or biofuel blends were not tested during the determination of the precision of the test method.

This document is a preview generated by EVS

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

WARNING — The use of this document may involve hazardous materials, operations and equipment. This document does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This document specifies a method using energy-dispersive X-ray fluorescence spectrometry for the determination of the sulfur content of petroleum products, such as naphthas, unleaded motor gasolines, middle distillates, residual fuel oils, base lubricating oils and components. The method is applicable to products with sulfur content in the range of a mass fraction of 0,03 % to a mass fraction of 5,00 %.

This test method can be used for biofuel or biofuel blends.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 3170, *Hydrocarbon Liquids — Manual sampling*

ISO 3171, *Petroleum liquids — Automatic pipeline sampling*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Principle

The test portion is placed in the beam emitted from an X-ray source. The excitation energy may be derived from a radioactive source, such as ^{55}Fe , or from an X-ray tube. The resultant excited characteristic X radiation is measured, and the accumulated count is compared with a calibration graph plotting counts against sulfur content as a percentage by mass, on a series of calibration samples covering the range of sulfur contents under examination.

5 Reagents and materials

5.1 White oil (light paraffin oil), of high purity grade, with a maximum sulfur content of 20 mg/kg.

For measurements at very low levels of sulfur content [below approximately a mass fraction of 0,1 %], matrix effects are minimized if a diluent of a type similar to the product being analysed is used for the