

**NAFTASAADUSED. VÄÄVLISISALDUSE MÄÄRAMINE.
ENERGIAT DISPERGEERIV X-KIIRGUSE
FLUORESTSENTSMEETOD**

**Petroleum products - Determination of sulfur content -
Energy-dispersive-X-ray fluorescence method**

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

See Eesti standard EVS-EN ISO 8754:2000 sisaldab Euroopa standardi EN ISO 8754:1995 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 8754:2000 consists of the English text of the European standard EN ISO 8754:1995.
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 15.02.1995.	Date of Availability of the European standard is 15.02.1995.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 75.080

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Descriptors: petroleum products, hydrocarbons, determination of content, chemical analysis sulphur, X-ray fluorescence spectrometry

English version

**Petroleum products - Determination of sulfur
content - Energy-dispersive-X-ray fluorescence
method (ISO 8754:1992)**

Produits pétroliers - Détermination de la
teneur en soufre - Méthode par fluorescence X
dispersive d'énergie (ISO 8754:1992)

Mineralölerzeugnisse - Bestimmung des
Schwefelgehaltes - Energiedispersives
Röntgenfluoreszenz-Verfahren (ISO 8754:1992)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat 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 Central Secretariat has the same status as the official versions.

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CEN

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

This European Standard has been taken over by the Technical Committee CEN/TC 19 "Petroleum products, lubricants and related products" from the work of ISO/TC 28 "Petroleum products and lubricants" of the International Organization for Standardization (ISO).

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 August 1995, and conflicting national standards shall be withdrawn at the latest by August 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Endorsement notice

The text of the International Standard ISO 8754:1992 was approved by CEN as a European Standard without any modification.

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

1 Scope

This International Standard specifies a method for the determination of the sulfur content of hydrocarbons such as naphthas, distillates, fuel oils, residues, lubricating base oils only, unleaded gasolines and components. The method is applicable to products having sulfur contents in the range 0,01 % (*m/m*) to 5 % (*m/m*).

Samples containing heavy-metal additives, lead alkyls, etc., interfere with the method. Elements such as silicon, phosphorus, calcium, potassium and halides interfere if present in concentrations of more than a few hundred milligrams per kilogram.

2 Principle

The sample is placed in the beam emitted from a suitable low-energy radioactive source, for example ⁵⁵Fe source (typical radiation of 740 MBq). The resultant excited characteristic X-radiation is measured and the accumulated count is compared with counts from previously calibrated blends to obtain the sulfur concentration as a percentage by mass. Three groups of calibration samples are required to span the concentration range 0,01 % (*m/m*) to 5 % (*m/m*).

3 Reagents

3.1 Di-*n*-butyl sulfide, sulfur content 21,91 % (*m/m*)

3.2 White oil, high-purity grade, containing less than 20 mg of sulfur per kilogram.

4 Apparatus

Ordinary laboratory apparatus and

4.1 Energy-dispersive X-ray fluorescence analyser: any suitable model can be used, set up according to the manufacturer's instructions.¹⁾

4.2 Analytical balance, accurate to 0,1 mg.

5 Procedure

5.1 Safety precautions

The X-ray equipment and manner of use shall comply with the regulations governing the use of ionizing radiation and/or recommendations of the International Commission on Radiological Protection. The radiation source shall be checked for radiation leakage at intervals as required by the regulations.

Servicing of the source shall only be carried out by a fully trained and competent person using the correct shielding techniques.

NOTE 1 At least one commonly used instrument has a thin beryllium window above the radioactive source. This window is very fragile and is easily broken during cleaning of the sample area to remove oily residues.

5.2 Sample cell preparation

The cells shall be thoroughly clean and dry before use. Handling of the film shall be kept to an absolute minimum. The window shall be renewed for the measurement of each sample.

NOTES

2 Window material is usually 6 µm polyester or polycarbonate film. Normal commercially available polyester window material contains small but variable amounts of calcium which may introduce errors.

3 Samples having a high aromatic content are likely to dissolve polycarbonate films.

1) Details of suppliers of suitable equipment may be obtained from the Secretariat of ISO/TC 28.