
Tekoči naftni proizvodi - Določanje žvepla v motornem gorivu etanol (E85) - Metoda z valovno disperzivno rentgensko fluorescenčno spektrometrijo

Liquid petroleum products - Determination of the sulfur content in Ethanol (E85) automotive fuel- Wavelength dispersive X-ray fluorescence spectrometric method

Flüssige Mineralölerzeugnisse - Bestimmung des Schwefelgehalts in Ethanolkraftstoff (E85) - Wellenlängendispersives Röntgenfluoreszenz-Spektrometrie-Verfahren

Produits pétroliers liquides - Détermination de la teneur en soufre dans le carburant éthanol pour automobiles (E85) - Méthode spectrométrique par fluorescence de rayons X dispersive en longueur d'onde

Ta slovenski standard je istoveten z: prEN 16997

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| 71.040.50 | Fizikalnokemijske analitske metode | Physicochemical methods of analysis |
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Liquid petroleum products - Determination of the sulfur content in Ethanol (E85) automotive fuel- Wavelength dispersive X-ray fluorescence spectrometric method

Produits pétroliers liquides - Détermination de la teneur en soufre dans des carburant automobile
Ethanol (E85) - Méthode de fluorescence de rayons X dispersive en longueur d'onde

Flüssige Mineralölerzeugnisse - Bestimmung des Schwefelgehalts in Ethanolkraftstoff (E85) - Wellenlängendispersives Röntgenfluoreszenz-Spektrometrie-Verfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 19.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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European foreword

This document (prEN 16997:2024) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 16997:2017.

This second edition includes the following significant changes compared with the previous edition EN 16997:2017:

- addition of Clause 3 “Terms and definitions” and renumbering of the other clauses accordingly;
- correction of Formula (3) in 10.3.1.

The methodology described in this document is based on EN ISO 20884 [1] and EN 15485 [2].

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prEN 16997:2024 (E)

1 Scope

This document specifies a wavelength-dispersive X-ray fluorescence (WDXRF) test method for the determination of the sulfur content in ethanol (E85) automotive fuel [3], containing ethanol between 50 % (V/V) and 85 % (V/V), from 5 mg/kg to 20 mg/kg, using instruments with either monochromatic or polychromatic excitation.

NOTE 1 Sulfur contents higher than 20 mg/kg can be determined after sample dilution with an appropriate solvent. However, the precision was not established for diluted samples.

NOTE 2 For the purposes of this document, the terms “% (m/m)” and “% (V/V)” are used to represent the mass fraction (μ) and the volume fraction (φ) of a material respectively.

WARNING — The use of this document can 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.

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.

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

EN ISO 3171, *Petroleum liquids — Automatic pipeline sampling (ISO 3171)*

EN ISO 22854, *Liquid petroleum products — Determination of hydrocarbon types and oxygenates in automotive-motor gasoline and in ethanol (E85) automotive fuel — Multidimensional gas chromatography method (ISO 22854)*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

4 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-L_{2,3} X-ray fluorescence and the count rate of the background radiation are measured. The correlation between the pulse rate and the concentration is calculated by software. The matrix effects are compensated either on the basis of fundamental parameters or using a correction table. The sulfur content is then determined using this calibration.

5 Reagents and materials

5.1 General

Compounds with a minimum purity of 99 % (m/m) as in 5.2 to 5.4. Where the purity of these compounds is less than 99 % (m/m), the concentrations and nature of all impurities shall be established.