

**Vedelad naftasaadused. Bensiin. Madalate
plii kontsentratsioonide määramine aatomiabsorptsioon-
spektromeetriselt**

Liquid petroleum products - Petrol - Determination of low
lead concentrations by atomic absorption spectrometry

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 237:2000 sisaldab Euroopa standardi EN 237:1996 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 11.01.2000 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 237:2000 consists of the English text of the European standard EN 237:1996.

This standard is ratified with the order of Estonian Centre for Standardisation dated 11.01.2000 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

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aatomiabsorptsioon-spektrofotomeetria, keemiline analüüs, mootorikütused, naftasaadused, sisalduse määramine, vedelikud

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Descriptors: petroleum products, liquids, motor fuels, chemical analysis, determination of content, atomic absorption spectrophotometry

English version

**Liquid petroleum products - Petrol - Determination
of low lead concentrations by atomic absorption
spectrometry**

Produits pétroliers liquides - Essence -
Détermination des basses teneurs en plomb par
spectrométrie d'absorption atomique

Flüssige Mineralölerzeugnisse - Ottokraftstoff
- Bestimmung von niedrigen Bleigehalten durch
Atomabsorptionsspektrometrie

This European Standard was approved by CEN on 1995-10-06. 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 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 prepared by the Technical Committee CEN/TC 19 "Petroleum products, lubricants and related products", the secretariat of which is held by NNI.

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 July 1996, and conflicting national standards shall be withdrawn at the latest by July 1996.

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, and the United Kingdom.

This European Standard is based on DIN 51 769 Part 8: "Determination of the lead content (total lead) of gasolines with a mass concentration of lead of 5 mg/l to 25 mg/l, direct determination by atomic absorption" (October 1981). DIN 51 769 Part 8 is technically equivalent with ASTM D 3237-79 "Standard Test Method for Lead in Gasoline By Atomic Absorption Spectroscopy".

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1 Scope

This European Standard specifies an atomic absorption spectrometric method for the determination of the total lead content of petrol with a lead content of 5 mg/l to 25 mg/l. This method is independent of the lead alkyl type.

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

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN ISO 3696	Water for analytical laboratory use - Specification and test methods
ISO 385-1	Laboratory glassware - Burettes - Part 1: General requirements
ISO 648	Laboratory glassware - One-mark pipettes
ISO 1042	Laboratory glassware - One-mark volumetric flasks
ISO 3170	Petroleum liquids - Manual sampling
ISO 3171	Petroleum liquids - Automatic pipeline sampling

3 Principle

The sample, diluted with propan-2-ol (isopropyl alcohol) and treated with iodine, is aspirated into the air/acetylene flame of an atomic absorption spectrometer. The absorbance is measured at a wavelength of 217,0 nm and is compared with that of calibration solutions of known lead concentrations.

4 Reagents and materials

Use only reagents of recognized analytical grade and water conforming to grade 3 of EN ISO 3696.

4.1 Concentrated lead standard stock solution, $c(\text{Pb}) = 1000 \text{ mg/l}$.

Dissolve 183,1 mg lead (II) acetate 3-hydrate in a mixture of 5 ml acetic acid and 5 ml water in a volumetric flask (5.4) at approximately 20 °C. Dilute to the mark with propan-2-ol (4.3).