

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

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low lead concentrations by atomic absorption  
spectrometry

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 237:2004 sisaldab Euroopa standardi EN 237:2004 ingliskeelset teksti.	This Estonian standard EVS-EN 237:2004 consists of the English text of the European standard EN 237:2004.
Käesolev dokument on jõustatud 21.12.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 21.12.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

<b>Käsitlusala:</b> This European Standard specifies an atomic absorption spectrometric method for the determination of the total lead content of petrol with a lead content of 2,5 mg/l to 10 mg/l. This method is independent of the lead alkyl type.	<b>Scope:</b> This European Standard specifies an atomic absorption spectrometric method for the determination of the total lead content of petrol with a lead content of 2,5 mg/l to 10 mg/l. This method is independent of the lead alkyl type.
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**Võtmesõnad:** analysis, atomic abso, chemical analysis and testin, determi, gasoline, kerosine product, laboratory equipment, laboratory ware, lead, lead content, liquid, materials testing, petroleum products, sequence of operations, test equipment, testing, volumetric analysis

**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 Atom-  
absorptionsspektrometrie

This European Standard was approved by CEN on 2004-07-09.

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.

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**CEN**

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

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## Foreword

This document (EN 237:2004) has been prepared by Technical Committee CEN/TC 19 "Petroleum products, lubricants and related products", 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 March 2005, and conflicting national standards shall be withdrawn at the latest by March 2004.

This document supersedes EN 237:1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## 1 Scope

This document specifies an atomic absorption spectrometric test method for the determination of the lead content of petrol in the range 2,5 mg/l to 10,0 mg/l. This test method is independent of the lead alkyl type.

NOTE 1 Annex A describes an alternative procedure but with a poorer precision for the determination of the lead content of petrol in the range 3,0 mg/l to 10,0 mg/l. This procedure is also independent of the lead alkyl type.

NOTE 2 For the purposes of this document, the term "% (V/V)" is used to represent the volume fraction.

**WARNING – The use of this document 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

The following referenced documents are indispensable for the application 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 1042, *Laboratory glassware – One-mark volumetric flasks (ISO 1042:1998)*.

EN ISO 3170, *Petroleum liquids - Manual sampling (ISO 3170:2004)*.

EN ISO 3171, *Petroleum liquids - Automatic pipeline sampling (ISO 3171:1988)*.

ISO 385-1, *Laboratory glassware - Burettes - Part 1: General requirements*.

ISO 648, *Laboratory glassware – One-mark pipettes*.

## 3 Principle

The sample, diluted to the tenth (V/V) with methyl isobutyl ketone 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.

NOTE Annex A describes an alternative procedure, but with a poorer precision, that may be used when the spectrometer is not stable enough in the wavelength region of 217,0 nm to obtain correct results according to the above.