

Liquid petroleum products - Unleaded petrol - Determination of benzene content by gas chromatography

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Determination of benzene content by gas
chromatography

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12177:2000 sisaldab Euroopa standardi EN 12177:1998 + AC:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 08.08.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12177:2000 consists of the English text of the European standard EN 12177:1998 + AC:2000.</p> <p>This document is endorsed on 08.08.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This standard specifies a column switching gas chromatographic method for the quantitative determination of benzene content in the range 0,05% (V/V) to 6% (V/V) in unleaded petrol having a final boiling point not greater than 220 °C. This method described in this standard is suitable for determining benzene in petrol, including petrol containing oxygenates, in line with the relevant EC Directives.</p>	<p>Scope: This standard specifies a column switching gas chromatographic method for the quantitative determination of benzene content in the range 0,05% (V/V) to 6% (V/V) in unleaded petrol having a final boiling point not greater than 220 °C. This method described in this standard is suitable for determining benzene in petrol, including petrol containing oxygenates, in line with the relevant EC Directives.</p>
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ICS 75.160.20

Võtmesõnad: benzene, chemical analysis, chromatographic analysis, determination of content, gas chromatography, gasoline, petroleum products

ICS 75.160.20

Descriptors: Petrol, unleaded, benzene content, testing.

English version

Liquid petroleum products

Unleaded petrol

Determination of benzene content by gas chromatography

Produits pétroliers liquides – Essence
sans plomb – Détermination de la
teneur en benzène par chromatogra-
phie en phase gazeuse

Flüssige Mineralölerzeugnisse –
Unverbleite Ottokraftstoffe – Bestim-
mung des Benzolgehaltes mittels
Gaschromatographie

This European Standard was approved by CEN on 1998-03-23.

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.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

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 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 October 1998, and conflicting national standards shall be withdrawn at the latest by October 1998.

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

In this standard annex A is informative.

1 Scope

This European standard specifies a column switching gas chromatographic method for the quantitative determination of benzene content in the range 0,05 % (V/V) to 6 % (V/V) in unleaded petrol having a final boiling point not greater than 220 °C.

The method described in this standard is suitable for determining benzene in petrol, including petrol containing oxygenates, in line with the relevant EC Directives¹⁾.

NOTE : For the purposes of this European Standard, the terms "% (V/V)" and "% (m/m)" are used to represent respectively the volume fraction and the mass fraction.

WARNING : The use of this 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 standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN ISO 3675	Crude petroleum and liquid petroleum products - Laboratory determination of density or relative density - Hydrometer method (ISO 3675:1993)
EN ISO 3838	Crude petroleum and liquid or solid petroleum products - Determination of density or relative density - Capillary-stoppered pycnometer and graduated bicapillary pycnometer methods (ISO 3838:1983)
EN ISO 12185	Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method (ISO 12185:1996)
ISO 3170	Petroleum liquids - Manual sampling
ISO 3171	Petroleum liquids - Automatic pipeline sampling

3 Principle

The benzene-containing fraction is isolated from the sample using a capillary column and, in a second capillary column, the benzene is separated and detected using a flame ionization detector.

¹⁾ EC Directive 85/210/EEC, Council Directive on the approximation of the laws of the Member States concerning the lead content of petrol. EC Directive 85/536/EEC, Council Directive on crude-oil savings through the use of substitute fuel components in petrol.