

**Naftasaadused. Pliisisalduse määramine  
bensiniis. Joodmonokloriidmeetod**

Petroleum products - Determination of lead content  
of gasoline - Iodine monochloride method

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 3830:2000 sisaldab Euroopa standardi EN ISO 3830:1995 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 3830:2000 consists of the English text of the European standard EN ISO 3830:1995.</p> <p>This document is endorsed on 11.01.2000 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>
--	---

<p><b>Käsitlusala:</b></p> <p>Käesolev standard esitab meetodi plii üldsisalduse määramiseks bensiinides, kusjuures pliialküülide sisalduse kontsentratsioon on vahemikus 0,026 g ja 1,300 g pliid liitri kohta. Standard ei ole rakendatav bensiinile, milles on mangaani sisaldavaid antideetonatsioonilisandeid.</p>	<p><b>Scope:</b></p>
---	----------------------

**ICS** 75.160.20

**Võtmesõnad:** bensiin, keemiline analüüs, mahtanalüüs, naftasaadused, plii, sisalduse määramine

Descriptors: Gasoline, testing, lead content.

**English version**

Petroleum products

**Determination of lead content of gasoline**

Iodine monochloride method  
(ISO 3830:1993)

Produits pétroliers; détermination de la teneur en plomb de l'essence; méthode au monochlorure d'iode (ISO 3830:1993)

Mineralölerzeugnisse; Bestimmung des Bleigehaltes von Ottokraftstoffen; Iod-monochlorid-Verfahren (ISO 3830:1993)

This European Standard was approved by CEN on 1995-07-30 and is identical to the ISO Standard as referred to.

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.

This European Standard exists 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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

International Standard

ISO 3830:1993 Petroleum products; determination of lead content of gasoline; iodine monochloride method, which was prepared by ISO/TC 28 'Petroleum products and lubricants' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 19 'Petroleum products, lubricants and related products' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by February 1996 at the latest.

In accordance with 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 United Kingdom.

## Endorsement notice

The text of the International Standard ISO 3830:1993 was approved by CEN as a European Standard without any modification.

**WARNING — The use of this International 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.**

## 1 Scope

This International Standard specifies a method for the determination of total lead content in gasolines containing lead alkyls at concentrations between 0,026 g and 1,300 g of lead per litre.

This International Standard is not applicable to gasoline containing manganese anti-knock additives.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements.*

ISO 835-1:1981, *Laboratory glassware — Graduated pipettes — Part 1: General requirements.*

ISO 1042:1983, *Laboratory glassware — One-mark volumetric flasks.*

ISO 1770:1981, *Solid-stem general purpose thermometers.*

ISO 3007:1986, *Petroleum products — Determination of vapour pressure — Reid method.*

ISO 3170:1988, *Petroleum liquids — Manual sampling.*

ISO 3171:1988, *Petroleum liquids — Automatic pipeline sampling.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

ISO 3839:1978, *Petroleum distillates and commercial aliphatic olefins — Determination of bromine number — Electrometric method.*

ISO 4788:1980, *Laboratory glassware — Graduated measuring cylinders.*

ISO 4800:1977, *Laboratory glassware — Separating funnels and dropping funnels.*

## 3 Principle

A known volume of the test sample is diluted with heavy distillate and shaken with aqueous iodine monochloride reagent. Any tetraalkyl lead compounds present react with the iodine monochloride and are extracted into the aqueous phase as the dialkyl lead compounds. The aqueous extract is separated from the gasoline and evaporated to low bulk to decompose free iodine monochloride. Any organic matter present is removed by oxidation with nitric acid, which also serves to convert the dialkyl lead compounds into inorganic lead compounds. The residue is dissolved in water and buffered to pH 5 with sodium acetate/acetic acid buffer. The lead content of the buffered solution is determined by titration with Na<sub>2</sub>EDTA using xylenol orange as indicator.