Toornafta ja vedelad või tahked naftasaadused. Tiheduse või suhtelise tiheduse määramine. Kapillaarselt suletava püknomeetri ja graadueeritud bikapillaarse püknomeetri meetod

Crude petroleum and liquid or solid petroleum products - Determination of density or relative density - Capillary-stoppered pyknometer and graduated bicapillary pyknometer methods

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 3838:2004 sisaldab Euroopa standardi EN ISO 3838:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 27.08.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 3838:2004 consists of the English text of the European standard EN ISO 3838:2004. This document is endorsed on 27.08.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This International Standard specifies methods for the determination of the density or relative density of crude petroleum and of petroleum products handled as liquids.	**Scope:** This International Standard specifies methods for the determination of the density or relative density of crude petroleum and of petroleum products handled as liquids.

ICS 75.040, 75.080

Võtmesõnad: kalibreerimine, naftasaadused, püknomeetrilised analüüsid, tahked ained, testimisseade, testimistingimused, tihedus (mass/maht), tiheduse mõõtmine, toorõli, vedelikud

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 3838

May 2004

ICS 75.040; 75.080

English version

Crude petroleum and liquid or solid petroleum products

Determination of density or relative density – Capillary-stoppered pyknometer and graduated bicapillary pyknometer methods
(ISO 3838 : 2004)

Pétrole brut et produits pétroliers liquides ou solides – Détermination de la masse volumique ou de la densité relative – Méthodes du pycnomètre à bouchon capillaire et du pycnomètre bicapillaire gradué (ISO 3838 : 2004)

Rohöl und flüssige oder feste Mineralölerzeugnisse – Bestimmung der Dichte oder der relativen Dichte – Verfahren mittels Pyknometer mit Kapillarstopfen und Bikapillar-Pyknometer mit Skale (ISO 3838 : 2004)

This European Standard was approved by CEN on 2004-04-08.

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.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

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

Management Centre: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 3838 : 2004 Crude petroleum and liquid or solid petroleum products – Determination of density or relative density – Capillary-stoppered pyknometer and graduated bicapillary pyknometer methods,

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', the Secretariat of which is held by NEN, 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 November 2004 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 3838 : 2004 was approved by CEN as a European Standard without any modification.

Contents

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1 Scope

1.1 This International Standard specifies methods for the determination of the density or relative density of crude petroleum and of petroleum products handled as liquids.

1.2 The capillary-stoppered pyknometer method is also for use with solids and this method may also be used for coal tar products, including road tars, creosote and tar pitches, or for mixtures of these with petroleum products. This method is not suitable for the determination of the density or relative density of highly volatile liquids having Reid vapour pressures greater than 50 kPa according to ISO 3007 or having an initial boiling point below 40 °C.

1.3 The graduated bicapillary pyknometer method is recommended for the accurate determination of the density or relative density of all except the more viscous products, and is particularly useful when only small amounts of samples are available. The method is restricted to liquids having Reid vapour pressures of 130 kPa or less according to ISO 3007 and having kinematic viscosities less than 50 mm^2/s [50 centistokes (cSt)] at the test temperature.

Special precautions are specified for the determination of the density or relative density of highly volatile liquids.

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.

ISO 91-1:1992, *Petroleum measurement tables — Part 1: Tables based on reference temperatures of 15 °C and 60 °F*

ISO 91-2:1991, *Petroleum measurement tables — Part 2: Tables based on a reference temperature of 20 °C*

ISO 653:1980, *Long solid-stem thermometers for precision use*

ISO 3007:1999, *Petroleum products and crude petroleum — Determination of vapour pressure — Reid method*

ISO 3507:1999, *Laboratory glassware — Pyknometers*

ISO 5024:1999, *Petroleum liquids and liquefied petroleum gases — Measurement — Standard reference conditions*