

**Crude petroleum and petroleum products**  
Determination of density using the oscillating U-tube method  
(ISO 12185 : 1996)  
English version of DIN EN ISO 12185

**DIN**  
**EN ISO 12185**

ICS 75.180.30

Descriptors: Petroleum products, liquids, testing, density.

Rohöl und Mineralölerzeugnisse – Bestimmung der Dichte – U-Rohr-Oszillationsverfahren  
(ISO 12185 : 1996)

**European Standard EN ISO 12185 : 1996 has the status of a DIN Standard.**

*A comma is used as the decimal marker.*

### National foreword

This standard has been published in accordance with a decision taken by CEN/TC 19 to adopt, without alteration, International Standard ISO 12185 as a European Standard.

The responsible German body involved in its preparation was the *Fachausschuß Mineralöl- und Brennstoffnormung* of the *Normenausschuß Materialprüfung* (Materials Testing Standards Committee).

The DIN Standards corresponding to the International Standards referred to in clause 2 of the EN are as follows:

ISO Standard	DIN Standard
ISO 91-1	DIN ISO 91-1
ISO 3015	DIN EN 23015
ISO 3016	DIN ISO 3016
ISO 3170	DIN 51750-1 and DIN 51750-2
ISO 3696	DIN ISO 3696
ISO 3838	DIN EN ISO 3838

### National Annex NA

#### Standards referred to

(and not included in **Normative references** and **Annex ZA**)

DIN 51750-1	Sampling of petroleum products – General
DIN 51750-2	Sampling of liquid petroleum products
DIN EN 23015	Determination of cloud point of petroleum products (ISO 3015 : 1992)
DIN EN ISO 3838	Determination of density or relative density of crude petroleum and liquid or solid petroleum products by the capillary-stoppered pycnometer and graduated bicapillary pycnometer methods (ISO 3838 : 1983)

EN comprises 9 pages.



ICS 75.180.30

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**English version**

**Crude petroleum and petroleum products**

Determination of density  
Oscillating U-tube method  
(ISO 12185 : 1996)

Pétroles bruts et produits pétroliers –  
Détermination de la masse volumique –  
Méthode du tube en U oscillant  
(ISO 12185 : 1996)

Rohöl und Mineralölerzeugnisse –  
Bestimmung der Dichte – U-Rohr-  
Oszillationsverfahren  
(ISO 12185 : 1996)

This European Standard was approved by CEN on 1996-06-01.

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

International Standard

ISO 12185 : 1996 Crude petroleum and petroleum products – Determination of density – Oscillating U-tube 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', the Secretariat of which is held by NNI, 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 December 1996 at the latest.

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

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.

## Endorsement notice

The text of the International Standard ISO 12185 : 1996 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

**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, using an oscillating U-tube density meter, of the density of crude petroleum and related products within the range 600 kg/m<sup>3</sup> to 1 100 kg/m<sup>3</sup> which can be handled as single-phase liquids at the test temperature and pressure.

This International Standard is applicable to liquids of any vapour pressure as long as suitable precautions are taken to ensure that they remain in single phase with no loss of light ends and subsequent changes in composition and density during both the sample handling and the density determination.

NOTE 1 If the determined density is to be converted to a density at some reference temperature using petroleum measurement tables, the determination should be carried out at a temperature as close as possible to the reference temperature in order to minimize uncertainties due to the use of generalized tables.

This method is not intended for use in calibrating on-line density meters.

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

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

ISO 3015:1992, *Petroleum products — Determination of cloud point.*

ISO 3016:1994, *Petroleum products — Determination of pour point.*

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 3838:1983, *Crude petroleum and liquid or solid petroleum products — Determination of density or relative density — Capillary-stoppered pycnometer and graduated bicapillary pycnometer methods.*