



SLOVENSKI STANDARD

SIST EN 23015:1998

01-maj-1998

Naftni proizvodi - Določanje motnišča (ISO 3015:1992)

Petroleum products - Determination of cloud point (ISO 3015:1992)

Mineralölerzeugnisse - Bestimmung des Cloudpoints (ISO 3015:1992)

Produits pétroliers - Détermination du point de trouble (ISO 3015:1992)

Ta slovenski standard je istoveten z: **EN 23015:1994**

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ICS:

75.080	Naftni proizvodi na splošno	Petroleum products in general
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EUROPEAN STANDARD

EN 23015:1994

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1994

UDC 665.7.035.2

Descriptors: Petroleum products, liquid fuels, cloud point, determination

English version

**Petroleum products - Determination of cloud point
(ISO 3015:1992)**Produits pétroliers - Détermination du point de
trouble (ISO 3015:1992)Mineralölzeugnisse - Bestimmung des
Cloudpoints (ISO 3015:1992)**iTeh STANDARD PREVIEW**
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This European Standard was approved by CEN on 1994-03-16. 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.

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CENEuropean 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 taken over by the Technical Committee CEN/TC 19 "Methods of test and specifications for petroleum products" from the work of ISO/TC 28 "Petroleum products and lubricants" of the International Organization for Standardization (ISO).

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of an identical text or by endorsement, at the latest by September 1994, and conflicting national standards shall be withdrawn at the latest by September 1994.

In accordance with the CEN/CENELEC Internal Regulations, 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

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The text of the International Standard ISO 3015:1992 has been approved by CEN as a European Standard without any modification.

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INTERNATIONAL STANDARD

**ISO
3015**

Second edition
1992-08-15

Petroleum products — Determination of cloud point

iTeh *Produits pétroliers — Détermination du point de trouble*
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Reference number
ISO 3015:1992(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75% of the member bodies casting a vote.

International Standard ISO 3015 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

This second edition cancels and replaces the first edition (ISO 3015:1974), of which it constitutes a technical revision.

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Petroleum products — Determination of cloud point

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 the cloud point of petroleum products which are transparent in layers 40 mm in thickness and have a cloud point below 49 °C.

2 Definition

For the purposes of this International Standard, the following definition applies:

2.1 cloud point: The temperature at which a cloud of wax crystals first appears in a liquid when it is cooled under specified conditions.

3 Principle

A sample is cooled at a specified rate and examined periodically. The temperature at which a cloud is first observed at the bottom of the test jar is recorded as the cloud point.

4 Apparatus (see figure 1)

4.1 Test jar, cylindrical, of clear glass, flat-bottomed, 33,2 mm to 34,8 mm in outside diameter and 115 mm to 125 mm in height.

The inside diameter of the jar may range from 30 mm to 32,4 mm, within the constraint that the wall thickness be no greater than 1,6 mm. The jar shall be marked with a line to indicate a sample height 54 mm \pm 3 mm above the inside bottom.

4.2 Thermometers, partial-immersion type, conforming to the specifications in table 1.

4.3 Cork, to fit the test jar, bored centrally to take the test thermometer.

4.4 Jacket, watertight, cylindrical, metal, flat-bottomed, about 115 mm in depth, with an inside diameter of 44,2 mm to 45,8 mm. It shall be supported in a vertical position in a cooling bath (4.7) so that not more than 25 mm projects out of the cooling medium, and it shall be capable of being cleaned.

4.5 Disc, of cork or felt, 6 mm in thickness, to fit loosely inside the jacket.

4.6 Gasket, ring form, about 5 mm in thickness, to fit snugly on the outside of the test jar and loosely inside the jacket.

This gasket may be made of rubber, leather or other suitable material, elastic enough to cling to the test jar and hard enough to hold its shape. The purpose of the ring gasket is to prevent the test jar from touching the jacket.

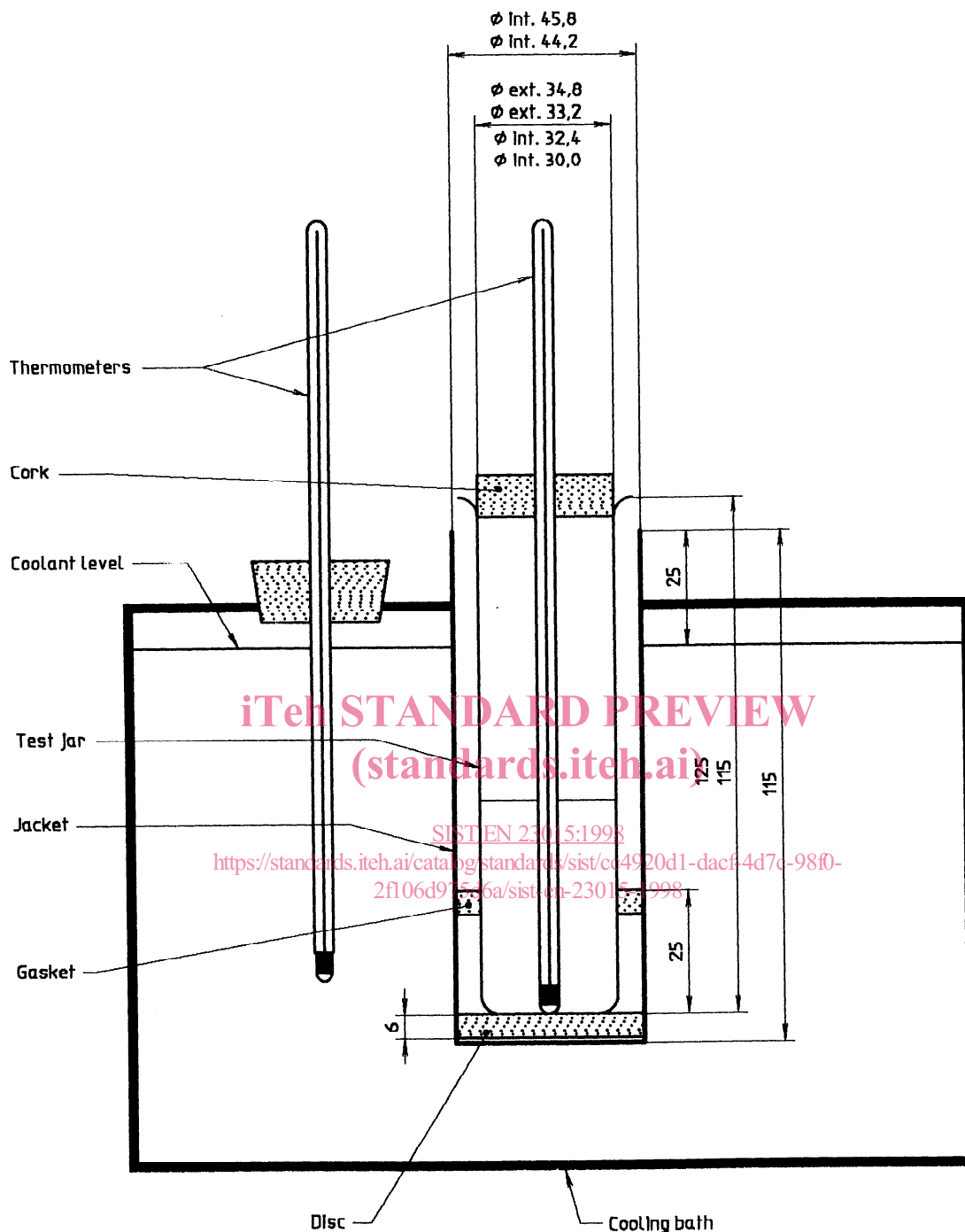


Figure 1 — Apparatus for cloud-point test

Table 1 — Specifications of thermometers

Specification	High cloud and pour	Low cloud and pour
Range	− 38 °C to + 50 °C	− 80 °C to + 20 °C
Immersion length	108 mm	76 mm
Graduation at each	1 °C	1 °C
Longer lines at each	5 °C	5 °C
Figured at each	10 °C	10 °C
Scale error not to exceed	0,5 °C	1 °C down to − 33 °C, 2 °C below − 33 °C
Expansion chamber: heating permitted to	100 °C	60 °C
Overall length	230 mm ± 5 mm	230 mm ± 5 mm
Stem diameter	6 mm to 8 mm	6 mm to 8 mm
Bulb length	7,0 mm to 10 mm	7,0 mm to 10 mm
Bulb diameter	5,5 mm min, but not greater than stem diameter	5,0 mm min, but not greater than stem diameter
Distance from bottom of bulb to line at	− 38 °C : 120 mm to 130 mm	− 70 °C : 100 mm to 120 mm
Length of scale	65 mm to 85 mm	70 mm to 100 mm

NOTE — The emergent-stem temperature is 21 °C throughout the scale range.

4.7 Cooling baths, of a type suitable for obtaining the required temperatures.

The size and shape of the baths are not specified, but a support to hold the jackets firmly in a vertical position is essential. The bath temperature shall be monitored by means of a high or low cloud and pour thermometer immersed to the correct immersion depth.

For the determination of cloud points below 10 °C, two or more baths are needed. The required bath temperatures may be maintained by refrigeration or by suitable freezing mixtures.

NOTE 1 The freezing mixtures commonly used are as follows:

For cloud-point temperatures down to

10 °C: ice and water

− 12 °C: crushed ice and sodium chloride crystals

− 26 °C: crushed ice and calcium chloride crystals

− 57 °C: solid carbon dioxide and acetone or petroleum naphtha.

The CO₂-based mixture may be made as follows: In a covered metal beaker, chill a suitable amount of acetone or petroleum naphtha to − 12 °C, or lower, by means of an ice/salt mixture. Then add enough solid carbon dioxide to the chilled acetone or petroleum naphtha to give the desired temperature. Solid carbon dioxide is commercially available in many areas.

5 Procedure

5.1 Bring the sample to be tested to a temperature at least 14 °C above the approximate cloud point, but not above 49 °C. Remove any moisture present by any suitable method, such as filtration through dry lintless filter paper, until the sample is perfectly clear, working at a temperature of at least 14 °C above the approximate cloud point, but not above 49 °C.

5.2 Pour the clear sample into the test jar (4.1) to the level mark.

5.3 Close the test jar tightly by the cork (4.3) carrying the appropriate test thermometer (see 4.2).

5.4 Use the high cloud and pour thermometer if the expected cloud point is at or above − 36 °C and the low cloud and pour thermometer if the expected cloud point is below − 36 °C. Adjust the position of the cork and the thermometer so that the cork fits tightly, the thermometer and the jar are coaxial, and the thermometer bulb is resting on the bottom of the jar.

Liquid-column separation of thermometers occasionally occurs and may escape detection. Thermometers shall therefore be checked immediately prior to the test and used only if the ice point is 0 °C ± 1 °C, measured with the thermometer immersed to the immersion line in an ice bath and with the emergent-stem temperature not differing significantly from 21 °C. Alternatively, immerse the thermometer to the reading level and correct for the resultant lower stem temperature.

5.4 Ensure that the disc (4.5), the gasket (4.6) and the inside of the jacket (4.4) are clean and dry. Place the disc in the bottom of the jacket. The disc and jacket shall have been placed in the cooling medium (see 4.7) a minimum of 10 minutes before the test jar is inserted. Place the gasket round the test jar, 25 mm from the bottom. Insert the test jar in the jacket. Never place a jar directly into the cooling medium.