

**SLOVENSKI STANDARD**  
**oSIST prEN ISO 22995:2018**  
**01-september-2018**

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**Naftni proizvodi - Določevanje motnišča - Metoda avtomatskega stopenjskega ohlajanja (ISO/DIS 22995:2018)**

Petroleum products - Determination of cloud point - Automated step-wise cooling method (ISO/DIS 22995:2018)

Mineralölerzeugnisse - Bestimmung des Cloudpoints - Verfahren mit automatischer schrittweiser Abkühlung (ISO/DIS 22995:2018)

Produits pétroliers - Détermination du point de trouble - Méthode automatique par refroidissement par palier (ISO/DIS 22995:2018)

**Ta slovenski standard je istoveten z: prEN ISO 22995**

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**ICS:**

75.080	Naftni proizvodi na splošno	Petroleum products in general
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**oSIST prEN ISO 22995:2018**

**en,fr,de**



# DRAFT INTERNATIONAL STANDARD

## ISO/DIS 22995

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## Petroleum products — Determination of cloud point — Automatic step-wise cooling method

*Produits pétroliers — Détermination du point de trouble — Méthode automatique par refroidissement par palier*

ICS: 75.080

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**ISO/DIS 22995:2018(E)****Foreword**

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The committee responsible for this document is CEN/TC 19 "Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin", the secretariat of which is held by NEN.

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## Introduction

This document describes an automatic method for the determination of the cloud point, inspired by the manual determination technique described in ISO 3015[1]. In comparison with that standard, the scope of the present document has been modified for taking into account FAME, current available distillate fuels as well as paraffinic diesel fuels, including those containing FAME, flow-improvers or other additives, intended for use in diesel engines and domestic heating installation

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# Petroleum products — Determination of cloud point — Automatic step-wise cooling method

## 1 Scope

This method determines cloud point using a step-wise cooling technique that is executed through automated equipment types with optical detection mode. This method is an alternative to the normal, manual technique.<sup>[1]</sup> It is a generic method that covers existing automated equipment.

The present method covers distillate fuels, fatty-acid methyl esters (FAME) and paraffinic diesel fuels, including blends thereof, as well as those containing flow-improvers or other additives, intended for use in diesel engines and domestic heating installations

NOTE 1 This method may be applicable for other products such as vegetable oils but these kind of products have not been evaluated during the inter-laboratory study

NOTE 2 The inter-laboratory program consisted of petroleum products of ISO 2049<sup>[2]</sup> color of 5,0 and lower. The precisions stated in this test method may not apply to samples with color determined according to ISO 2049 higher than 5,0.

**WARNING — The use of this Standard can 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 users of this standard to take appropriate measures to ensure the safety and health of personnel prior to application of the standard, and fulfil other applicable requirements for this purpose.**

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3170, *Petroleum liquids — Manual sampling*

ISO 3171, *Petroleum liquids — Automatic pipeline sampling*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### cloud point

temperature at which a cloud of wax crystals first appears in a liquid when it is cooled under specified conditions

## 4 Principle

A volume of 45 ml of sample is cooled at a specified rate and examined periodically or continuously. The temperature at which a cloud is first observed in the test jar is recorded as the cloud point.

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## 5 Reagents and material

**5.1 Lintless filter paper**, with particle retention of  $(5 \pm 1) \mu\text{m}$

## 6 Apparatus

**6.1 Test jar**, cylindrical, of clear glass, flat-bottomed, 33,2 mm to 34,8 mm in outside diameter and 80 mm to 125 mm in height.

The inside diameter of the jar may range from 30,0 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  $(54 \pm 3)$  mm above the inside bottom.

### 6.2 Temperature probes

**6.2.1 Sample temperature probe**, cylindrical vertical in the center of the test jar and plunged in the sample having the sensitive area located at maximum 10 mm from the bottom of the jar.

A thermometer with digital display shall be used for measuring the sample temperature with a resolution of 0,1 °C and an accuracy of 0,5 °C (see Figure 1).

NOTE The exact location of the probe depends on the equipment design manufacturer.

**6.2.2 Temperature probe with digital display**, for measuring the cooling bath temperature.

**6.3 Device** to close the test jar and the jacket avoiding any moisture to be introduced

**6.4 Jacket**, watertight, cylindrical, metal, flat-bottomed, minimum 90 mm in depth with an inside diameter of 44,2 mm to 45,8 mm. It shall be supported in a vertical position and it shall be capable of being cleaned.

**6.5 Disc (optional, depending on the design of the equipment)**, made of any insulating material (for example cork or felt), 6 mm in thickness, to fit loosely inside the jacket to maintain the test jar and avoid any direct contact with the jacket.

**6.6 Gasket (optional, depending on the design of the equipment)**, 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.

**6.7 An automated detection device**, consisting of an optical detection system able to detect cloud or wax crystals appearance in the sample every 1 °C at minimum.