

Petroleum products - Determination of boiling range distribution by gas chromatography method - Part 4: Light fractions of crude oil

Táto norma obsahuje anglickú verziu európskej normy. This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/16

Obsahuje: EN 15199-4:2015

STN EN 15199-4: 2016

EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN 15199-4

September 2015

ICS 75.080

English Version

Petroleum products - Determination of boiling range distribution by gas chromatography method - Part 4: Light fractions of crude oil

Produits pétroliers - Détermination de la répartition dans l'intervalle de distillation par méthode de chromatographie en phase gazeuse - Partie 4 : Lumière fractions du pétrole brut

Mineralölerzeugnisse - Gaschromatographische Bestimmung des Siedeverlaufes - Teil 4: Leichte Fraktionen des Rohöls

This European Standard was approved by CEN on 1 August 2015.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

| Contents | | page |
|--------------------|---|------|
| European foreword3 | | |
| 1 | Scope | 4 |
| 2 | Normative references | 4 |
| 3 | Terms and definitions | |
| 4 | Principle | |
| 5 | Reagents and materials | |
| 6 | Apparatus | |
| 6.1 | Analytical balance | |
| 6.2 | Gas chromatograph | |
| 6.3 | Detector | |
| 6.4 | Pre-column configurations | |
| 6.4.1 | Heated valve switching box (see Figure B.1) | 5 |
| 6.4.2 | Injection port (see Figure B.2 and B.3) | |
| 6.5 | Analytical column | |
| 6.5.1 | General | |
| 6.5.2 6.6 | Resolution | |
| 6.7 | Skewness Data collection | |
| | | |
| 7 | Sampling and sample handling | |
| 8 | Calculation of response factors | |
| 9 | Procedure | 9 |
| 9.1 | Sample preparation | |
| 9.2 | Determination of backflush time | |
| 9.2.1 | Initial work | |
| 9.2.2 9.2.3 | Analytical column | |
| 9.2.3 9.3 | Accelerated analytical columnSample analysis | |
| 9.3 9.3.1 | <u> </u> | |
| 9.3.2 | Calculation of individual components results | |
| 9.3.3 | Boiling point distribution of fraction up to and including nonane | |
| 10 | Reporting | 11 |
| 11 | Precision | 11 |
| 11.1 | General | |
| 11.2 | Repeatability, <i>r</i> | |
| 11.3 | Reproducibility, R | |
| 12 | Test report | 12 |
| Annex | x A (informative) Analysis assistance | 13 |
| Annex | x B (informative) Apparatus configuration | 19 |
| Diblia | | 21 |

European foreword

This document (EN 15199-4:2015) has been prepared by Technical Committee 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.

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 March 2016, and conflicting national standards shall be withdrawn at the latest by March 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

EN 15199 consists of the following parts, under the general title *Petroleum products* — *Determination of boiling range distribution by gas chromatography method*:

- Part 1: Middle distillates and lubricating base oils
- Part 2: Heavy distillates and residual fuels
- Part 3: Crude oil
- Part 4: Light fractions of crude oil

This part of the standard is based on IP 601 [1] and describes the determination of boiling range distribution of hydrocarbons up to n-nonane in crude oil. The results of this test method can be combined with those from EN 15199-3, to give a full boiling point distribution of crude oil.

Part 4 is harmonized with ASTM D7900 [2].

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard describes a method for the determination of the boiling range distribution of petroleum products by capillary gas chromatography using flame ionization detection. This European Standard is applicable to stabilized crude oils and for the boiling range distribution and the recovery up to and including n-nonane. A stabilized crude oil is defined as having a Reid Vapour Pressure equivalent to or less than 82,7 kPa as determined by IP 481 [3].

NOTE For the purposes of this European Standard, the terms "(m/m)" and "(V/V)" are used to represent respectively the mass fraction, ω , and the volume fraction, φ .

WARNING — The use of this European Standard can involve hazardous materials, operations and equipment. This European 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 take appropriate measures to ensure safety and health of personnel prior to application of the standard, and fulfil statutory and regulatory 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.

EN ISO 3170, Petroleum liquids — Manual sampling (ISO 3170)

EN ISO 3171, Petroleum liquids — Automatic pipeline sampling (ISO 3171)

koniec náhľadu – text ďalej pokračuje v platenej verzii STN