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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 15199-4:2021 sisaldab Euroopa standardi EN 15199-4:2021 ingliskeelset teksti.	This Estonian standard EVS-EN 15199-4:2021 consists of the English text of the European standard EN 15199-4:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.09.2021.	Date of Availability of the European standard is 01.09.2021.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 15199-4

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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 : Fractions légères du pétrole brut

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

This European Standard was approved by CEN on 14 June 2021.

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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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

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European foreword

This document (EN 15199-4:2021) 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 2022, and conflicting national standards shall be withdrawn at the latest by March 2022.

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

This document supersedes EN 15199-4:2015.

In comparison with the previous edition, the following technical modification has been made.

The document is often used in combination with an analysis of boiling point distribution (Simdis) of crude oil. Consensus has been reached about the algorithm for merging the results of the light end analysis and the Simdis analysis. This algorithm is added as normative Annex C

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*

Part 4 is harmonized with IP 601 [1] and ASTM D7900 [2].

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

1 Scope

This document specifies a method for the determination of the boiling range distribution of petroleum products by capillary gas chromatography using flame ionization detection. This document 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].

Annex C specifies an algorithm for merging the boiling point distribution results obtained using this method with the results obtained with EN 15199-3. This will result in a boiling range distribution and recovery up to C120.

NOTE 1 There is no specific precision statement for the combined results obtained after merging the results of EN 15199-3 and EN 15199-4. For the precision of the boiling range distribution up to *n*-nonane, the precision statement of EN 15199-4 applies. For the precision of the boiling range distribution from *n*-nonane through C120, the precision of EN 15199-3 applies.

NOTE 2 For the purposes of this document, 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 document can involve hazardous materials, operations and equipment. This document does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this document to take appropriate measures to ensure safety and health of personnel prior to application of the document and fulfil statutory and regulatory requirements for this purpose.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN ISO 3170, *Petroleum liquids - Manual sampling (ISO 3170)*

EN ISO 3171, *Petroleum liquids - Automatic pipeline sampling (ISO 3171)*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
recovery
combined mass percentages of all light hydrocarbon identified in the chromatogram(except the internal standard peak) of the sample up to and including n-nonane