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Liquefied petroleum gases - Determination of dissolved residues - High-temperature gravimetric method

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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EUROPEAN STANDARD

EN 15471

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 75.160.20

Supersedes EN 15471:2007

English Version

Liquefied petroleum gases - Determination of dissolved residues - High-temperature gravimetric method

Gaz de pétrole liquéfié - Détermination des résidus dissous - Méthode gravimétrique à haute température

Flüssiggas - Bestimmung der gelösten Rückstände - Gravimetrisches Hochtemperaturverfahren

This European Standard was approved by CEN on 24 April 2017.

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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.

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European Foreword

This document (EN 15471:2017) 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of an identical text or by endorsement, at the latest by January 2018, and conflicting national standards shall be withdrawn at the latest by January 2018.

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 15471:2007.

The changes of this second version compared to the previous version are as follows:

- a) numerous changes of both technical and editorial nature have been made to add clarity to the text;
- b) clarification that the use of a drying agent in the desiccator is not recommended;
- c) the description of the equipment used has been improved;
- d) a note to filter discs (6.3) was added;
- e) references to ASTM D381 have been replaced by references to EN ISO 6246.

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

1 Scope

This European Standard specifies a method for determining the dissolved residual matter in liquefied petroleum gases (LPG), which remains after evaporation at 105 °C using the jet evaporation equipment described in EN ISO 6246.

The measurement range is from 20 mg/kg to 100 mg/kg. Higher concentrations can be determined by adjusting the sample size.

The precision data of the method have been determined from 20 mg/kg to 100 mg/kg, with samples amount from 100 g to 50 g.

NOTE An alternative European Standard, EN 15470 [1], specifies a gas chromatography method.

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 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 4257, *Liquefied petroleum gases - Method of sampling (ISO 4257)*

EN ISO 6246, *Petroleum products - Gum content of fuels - Jet evaporation method (ISO 6246)*

3 Terms and definitions

For the purposes of this document, the following term and definition applies.

3.1

liquefied petroleum gas

LPG

petroleum gas that can be stored and/or handled in the liquid phase under moderate conditions of pressure and at ambient temperature, consisting predominantly of propane and butanes, with small proportions of propene, butenes and pentanes/pentenenes

4 Principle

A known mass of LPG is sampled and concentrated by evaporation. The concentrate is transferred into a beaker of 100 ml capacity and then evaporated by jet evaporation under controlled conditions of temperature and airflow. The oily residue remaining after this procedure is cooled and weighed.

5 Reagents

5.1 **n-heptane**, analytical grade.

5.2 **propan-2-ol**, technical grade, for the cooling bath.