

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

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 15471:2007 sisaldab Euroopa standardi EN 15471:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.12.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 15471:2007 consists of the English text of the European standard EN 15471:2007.</p> <p>This document is endorsed on 18.12.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This Standard specifies a method, for determining the residual matter in liquefied petroleum gases (LPG), which remains after evaporation at 105 °C. This material represents those products deposited in car LPG vaporizers that are subject to a temperature equal to or greater than the boiling temperature of water. The range of determination extends from 50 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. This method has been developed as a potential replacement of the commonly used method EN ISO 13757 [1]. The advantages of the method are that a small quantity of LPG (100 ml) is required. NOTE An alternative European Standard, EN 15470 [2], with the same scope, specifies a gas chromatography method with slightly better fidelity. WARNING — Use of this method involves hazardous materials and operations. It is the responsibility of the user to establish appropriate safety and health precautions. All handling must be performed in a fume hood.</p>	<p>Scope:</p> <p>This Standard specifies a method, for determining the residual matter in liquefied petroleum gases (LPG), which remains after evaporation at 105 °C. This material represents those products deposited in car LPG vaporizers that are subject to a temperature equal to or greater than the boiling temperature of water. The range of determination extends from 50 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. This method has been developed as a potential replacement of the commonly used method EN ISO 13757 [1]. The advantages of the method are that a small quantity of LPG (100 ml) is required. NOTE An alternative European Standard, EN 15470 [2], with the same scope, specifies a gas chromatography method with slightly better fidelity. WARNING — Use of this method involves hazardous materials and operations. It is the responsibility of the user to establish appropriate safety and health precautions. All handling must be performed in a fume hood.</p>
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ICS 75.160.10

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English Version

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

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

Flüssiggas - Bestimmung der gelösten Rückstände -
Gravimetrisches Hochtemperaturverfahren

This European Standard was approved by CEN on 7 October 2007.

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Foreword

This document (EN 15471:2007) 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 May 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

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.

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1 Scope

This Standard specifies a method, for determining the residual matter in liquefied petroleum gases (LPG), which remains after evaporation at 105 °C. This material represents those products deposited in car LPG vaporizers that are subject to a temperature equal to or greater than the boiling temperature of water. The range of determination extends from 50 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.

This method has been developed as a potential replacement of the commonly used method EN ISO 13757 [1]. The advantages of the method are that a small quantity of LPG (100 ml) is required.

NOTE An alternative European Standard, EN 15470 [2], with the same scope, specifies a gas chromatography method with slightly better fidelity.

WARNING — Use of this method involves hazardous materials and operations. It is the responsibility of the user to establish appropriate safety and health precautions. All handling must be performed in a fume hood.

2 Normative reference

The following referenced documents are indispensable for the application 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 4257, *Liquefied petroleum gases - Method of sampling (ISO 4257:2001)*

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, 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** 2-propanol, technical grade, for the cooling bath.
- 5.3** Solid carbon dioxide, for the cooling bath.