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STN	**Automobilové palivá LPG Požiadavky a skúšobné metódy**	**STN EN 589** 65 6503

Automotive fuels - LPG - Requirements and test methods

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. 05/24

Táto norma čiastočne nahrádza STN EN 589 + A1 z júla 2022, kde národná príloha NA zostáva v platnosti.

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Supersedes EN 589:2018+A1:2022

English Version

Automotive fuels - LPG - Requirements and test methods

Carburants pour automobiles - GPL - Exigences et méthodes d'essai

Kraftstoffe - Flüssiggas - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 12 February 2024.

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

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European foreword

This document (EN 589:2024) 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of an identical text or by endorsement, at the latest by September 2024, and conflicting national standards shall be withdrawn at the latest by September 2024.

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 589:2018+A1:2022.

This is the 7th edition of EN 589. The main technical changes compared to the 2nd version EN 589:2018+A1:2022 of the 6th edition EN 589:2018 include:

a) change of vapour pressure requirement, increase of minimum vapour pressure;

b) change of limit value for 1,3 butadiene to < 0,10 % *m*/*m* [4].

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, Türkiye and the United Kingdom.

1 Scope

This document specifies requirements and test methods for marketed and delivered automotive LPG (commonly known as low pressure gas or liquefied petroleum gas).

This document is applicable to automotive LPG for use in LPG engine vehicles designed to run on automotive LPG.

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

WARNING — Attention is drawn to the risk of fire and explosion when handling LPG and to the hazard to health arising through inhalation of excessive amounts of LPG.

LPG is a highly volatile hydrocarbon liquid which is normally stored under pressure. If the pressure is released large volumes of gas will be produced which form flammable mixtures with air over the range of approximately 2 % (V/V) to 10 % (V/V). This document involves the sampling, handling and testing of LPG. Naked flames, unprotected electrical equipment electrostatic hazards etc. are sources of ignition for LPG.

LPG in liquid form can cause cold burns to the skin. National health and safety regulations can apply.

LPG is heavier than air and accumulates in cavities. There is a danger of suffocation when inhaling high concentrations of LPG.

CAUTION — One of the tests described in this document involves the operator inhaling a mixture of air and LPG vapour. Particular attention is drawn to the cautionary statement provided in A.1, where this method is referred to.

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 15469, *Petroleum products — Test method for free water in liquefied petroleum gas by visual inspection*

EN 15470, *Liquefied petroleum gases — Determination of dissolved residues — High temperature Gas chromatographic method*

EN 15471, *Liquefied petroleum gases — Determination of dissolved residues — High-temperature gravimetric method*

EN 16423, *Liquefied petroleum gases — Determination of dissolved residue — Gas chromatographic method using liquid, on-column injection*

EN 16942+A1, *Fuels — Identification of vehicle compatibility — Graphical expression for consumer information*

EN 17178:2019, *Liquid petroleum products — Determination of the total volatile sulfur content in liquefied petroleum gases by ultraviolet fluorescence spectroscopy*

EN 27941, *Commercial propane and butane — Analysis by gas chromatography (ISO 7941)*

EN ISO 4256, *Liquefied petroleum gases — Determination of gauge pressure — LPG method (ISO 4256)*

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

EN ISO 4259-2, *Petroleum and related products — Precision of measurement methods and results — Part 2: Interpretation and application of precision data in relation to methods of test (ISO 4259-2)*

EN ISO 6251, *Liquefied petroleum gases — Corrosiveness to copper — Copper strip test (ISO 6251)*

EN ISO 8819, *Liquefied petroleum gases — Detection of hydrogen sulfide — Lead acetate method (ISO 8819)*

EN ISO 8973, *Liquefied petroleum gases — Calculation method for density and vapour pressure (ISO 8973)*

DIN 51619, *Testing of mineral oil hydrocarbons — Determination of the composition of liquid petroleum gases — Gas chromatographic analysis under special consideration of 1,3-butadiene with mass fractions ≤ 0,1 % (m/m)*

ASTM D6667, *Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence*