

ICS 75.160.30

CCS E46



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 19159-2012

Automotive liquefied petroleum gases

车用液化石油气

(English Translation)

Issued on: November 5, 2012

Implemented on: April 1, 2013

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

Chapter 4 of this standard (except for test methods) is mandatory AND the rest is recommended.

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB 19159-2003; as compared with GB 19159-2003, the main technical changes are as follows.

- DEFINE the scope of application as "liquefied petroleum gas for ignition type of internal combustion engine" (SEE Chapter 1);
- DELETE the limitation of the component mass fraction (SEE Table 1; Chapter 4 of 2003 version);
- DELETE the limitation on grease observation (SEE Table 1; Chapter 4 of

2003 version);

- MODIFY the total sulfur content from "< 270 mg/m³" to "not more than 50 mg/kg" (SEE Table 1; Chapter 4 of 2003 version);
- MODIFY the evaporation residue from "not more than 0.05 mL/100 mL" to "not more than 60 mg/kg" (SEE Table 1; Chapter 4 of 2003 version);
- MODIFY the density measurement temperature from "20 °C" to "15 °C" (SEE Table 1; Chapter 4 of 2003 version);

- MODIFY the vapor pressure measurement temperature from "37.8 °C" to "40 °C" (SEE Table 1; Chapter 4 of 2003 version);
- ADD the technical requirements for motor octane number (SEE Table 1);
- Based on the temperature at the minimum vapor pressure 150 kPa, DIVIDE the product level (SEE Table 1);
- ADD the calculation method of liquefied petroleum gas motor octane number, measurement method and calculation method of the absolute vapor pressure and gauge pressure of liquefied petroleum gas, the vapor pressure limit of liquefied petroleum gas of different designations corresponding to 40 °C, AND the detection method of the odor of liquefied petroleum gas (SEE Appendix).

This standard, combining with Chinese vehicle liquefied petroleum gas resources, vehicle use characteristics and status quo, through modification, adopts the EU standard EN 589.2008 "Automotive fuels - LPG - Requirements Automotive liquefied petroleum gases

WARNING. Failure to comply with appropriate precautions may result in the hazards for the production, storage, and use process of the products covered in this standard. This standard is not intended to advise on all safety issues related to this product. It is the responsibility of the user to establish appropriate safety and protective measures prior to the use of this standard and to determine the suitability of the relevant regulatory limits.

1 Scope

This standard specifies the classification and marking, technical requirements and test methods, inspection rules, marking, storage and transportation, safety and health requirements of automotive liquefied petroleum gas.

This standard is applicable to the liquefied petroleum gas used in the ignition type internal combustion engine.

2 Normative reference documents

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this Standard.

GB 150 Steel pressure vessels (all parts)

GB/T 8017-2012 Standard test method for vapor pressure of petroleum products - Reid method

GB 11518 Hygiene standard for liquefied petroleum gas in the air of workshop

GB 14193 Rules for filling of liquefied gas cylinders

GB 17259 Steel cylinders for the liquefied petroleum gas for vehicles

GB 18352.3 Limits and measurement methods for emissions from light-duty vehicles (China III, IV stage)

SH/T 0125 Test method for hydrogen sulfide in liquefied petroleum gas (lead acetate method) (ISO 8819.1987, MOD)

SH/T 0221 Determination method for density or relative density of liquefied petroleum gas (pressure hydrometer method) (ISO 3993.1984, MOD)

SH/T 0222 Determination method for total sulfur content of liquefied petroleum gas (Coulometric method)

SH/T 0232 Determination method for copper strip corrosion of liquefied petroleum gas (ISO 6251.1982, MOD)

SH/T 0233 Sampling method for liquefied petroleum gas

SH/T 0614 Determination method for component of industrial propane and butane (gas chromatography method) (ISO 7911.1988, MOD)

SH/T 1142 C4 fraction for industrial use - Sampling in the liquid phase

SY 5985 Liquefied petroleum gas safety control stipulation

ASTM D 6667 Standard test method for determination of total volatile sulfur

in gaseous hydrocarbons and liquefied petroleum gases by ultraviolet fluorescence

ISO 8973 Liquefied petroleum gases - Calculation method for density and vapor pressure

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

Safety supervision procedures for liquefied gas railway tanker ([87] HSZ No. 1174)

Safety supervision procedures for liquefied gas vehicle tanker (LBF [1994] No. 262)

Pressure vessel safety technical supervision procedures (ZJJJGF [1999] No. 154)

Cylinder safety supervision procedures (ZJJJGF [2000] No. 250)

3.1 Product Classification

- a) When the new product is put into production OR the product is subjected to finalization assessment;
- b) When the raw materials, processing technology, and so on have significant changes AND the production is started after overhauling;
- c) When there is significant difference between the exit-factory inspection results and the last type inspection results.

5.2 Batching

Under the conditions of same raw materials and processes, each tank of product as produced is treated as a batch.

5.3 Sampling

Sampling is conducted in accordance with SH/T 0233.