

ICS 75.160.20
CCS E 31



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

GB 19147-2016

Replacing GB 19147-2013

Automobile diesel fuels

车用柴油

Issued on: December 23, 2016

Implemented on: December 23, 2016

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Terms and definitions...	7
4 Product classification...	7
5 Technical requirements and test methods...	8
6 Sampling...	14
7 Marking, packaging, transportation and storage...	14
8 Safety...	14
16 Annex B (normative) Test for nitrate-type cetane number modifiers in automobile diesel fuels... 18 GB 19147-2016 "Automobile diesel fuels" No. 1 amendment of national standard...	21

Foreword

All technical contents of this Standard are mandatory. This Standard is drafted in accordance with the rules given in GB/T 1.1-2009. This Standard replaces GB 19147-2013 "Automobile diesel fuels (V)". Compared with GB 19147-2013, in addition to editorial modifications, main technical changes of this Standard are as follows: - ADD "automobile diesel fuels cannot be artificially added with methanol" (see

5.1 of this Standard,

5.1 of 2013 edition); - DELETE technical requirements and test methods for automobile diesel fuels (III) (see Table 1 of 2013 edition); ADD technical requirements and test methods for automobile diesel fuels (V) (see Table 3 of this Standard) - INCREASE the flash point of No. 5, No. 0 and No. 10 automobile diesel fuels TO not lower than 60 °C (see Table 1 and Table 2 of this Standard, Table 2 and Table 3 of 2013 edition); - MODIFY the arbitration test method of 10 % carbon residue of distillation residue TO GB/T 17144; - MODIFY the arbitration test method of polycyclic aromatic hydrocarbons content TO SH/T 0806; - ADD the determination method, NB/SH/T 0916, of fatty acid methyl ester content, which is regarded as the arbitration test method; - MODIFY Clause 9, "Implementation of the Standard" (see Clause 9 of this Standard, Clause 9 of 2013 edition). This Standard is proposed by National Energy Board. This Standard is under the technical jurisdiction of Subcommittee on Petroleum and Lubricants of National Technical Committee on Petroleum Products and Lubricants of Standardization Administration of China (SAC/TC 280/SC 1). Drafting organizations of this Standard. China Petroleum & Chemical Corporation

Petrochemical Research Institute, China National Petroleum Corporation Refining and Chemical Branch, China National Petroleum Corporation Petrochemical Research Institute, China Petroleum Refining and Chemical Co., Ltd., China Automotive Research Center. Main drafters of this Standard. Ni Bei, Long Jun, Li Wenle, Zhang Jianrong, Zhang Yan, Zhang Guoxiang, Ding Xiaoliang, Zhang Chunlong, Liu Qian. The previous edition of the standards replaced by this Standard are as follows: - GB/T 19147-2003, GB 19147-2009, GB 19147-2013 "Automobile diesel fuels (IV)", GB 19147-2013 "Automobile diesel fuels (V)". Automobile diesel fuels WARNING - If the appropriate protective measures are not observed, the products in this Standard may be dangerous in the course of production, transportation, handling, storage and use. This Standard is not intended to advise on all safety issues related to this product. It is the responsibility of the user to adopt appropriate safety and protective measures and to ensure compliance with the conditions set forth in the relevant national regulations.

1 Scope

China's mandatory national standard for automobile diesel - the whole of its technical content is compulsory. It sets the terms and definitions, the product classification, the technical requirements with their test methods, the sampling, and the provisions for marking, packaging, transport, storage, safety and implementation. It applies to diesel for compression-ignition engines made from petroleum, with or without performance-improving additives, but not to diesel blended with biodiesel; national amendment No. 1, in force since 1 January 2019, extends it to the diesel used by agricultural machinery, diesel locomotives, construction machinery and generator sets. Six grades are set by solidifying point - 5, 0, -10, -20, -35 and -50 - each tied to the lowest temperature of the region at a 10 % risk rate, from above 8 °C down to above -44 °C, with an informative annex to help choose. Tables 1 to 3 carry the requirements for diesel (IV), (V) and (VI); the stage-VI table caps sulfur at 10 mg/kg, ash at 0.01 %, carbon residue on the 10 % distillation residue at 0.3 %, polycyclic aromatic hydrocarbons at 7 % and total contamination at 24 mg/kg, sets cetane number at not less than 51, 49 or 47 by grade and flash point at not less than 60 °C, 50 °C or 45 °C, and, after the amendment, allows railway locomotive diesel a cetane number of 45 and a cetane index of 43. The deliberate addition of methanol is forbidden, and a normative annex gives the test for nitrate-type cetane improver. Issued and in force from 23 December 2016, it replaces GB 19147-2013 and is the companion to GB 17930-2016 on motor gasoline and GB 17411-2015 on marine fuel oils, all under SAC/TC 280/SC 1.

This Standard specifies terms and definitions, product classification, technical requirements and test methods, sampling, marking, packaging, transportation and storage, safety and implementation of the Standard of automobile diesel fuels. This Standard applies to automobile diesel fuels made from the petroleum or added with additives that improve the use performance, for compression-ignition engine automobiles. This Standard does not apply to automobile diesel fuels with biodiesel as a blending component.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the dated edition cited applies. For undated references, the latest edition of the referenced document (including all amendments) applies.

GB 190 Packing symbol of dangerous goods

GB/T 258 Standard test method for determination of acidity of light petroleum products

GB/T 260 Determination of water content in petroleum products

GB/T 261 Determination of flash point - Pensky-Martens closed cup method

GB/T 265 Petroleum products - Determination of kinematic viscosity and calculation of dynamic viscosity

GB/T 268 Petroleum products - Determination of carbon residue - Conradson method

3 Terms and definitions

For the purpose of this document, the following terms and definitions.

3.1 content of polycyclic aromatic hydrocarbons Total aromatic hydrocarbon content in automobile diesel fuels minus the monocyclic aromatic hydrocarbon content.

4 Product classification

Automobile diesel fuels are divided into six designations according to the solidification point.

5 Technical requirements and test methods

5.1 Additives used in automobile diesel fuels shall be of no known hazardous effects. Additives shall be used in the recommended dosage. Automobile diesel fuels shall not contain any additives and contaminants that may cause the automobile fail to function properly.

5.2 Technical requirements and test methods for automobile diesel fuels (IV), automobile diesel fuels (V) and automobile diesel fuels (VI) are as shown in Table 1, Table 2 and Table 3, respectively.

6 Sampling

Sampling is carried out in accordance with GB/T 4756; take 4 L for inspection and as reserve samples.

7 Marking, packaging, transportation and storage

7.1 The tanker for automobile diesel fuels, complying with the requirements in Table 1, Table 2 and Table 3 of this Standard, that are sold to users shall be clearly marked with the name, designation and grade (IV, V or VI) of the product, e.g.

7.2 Automobile diesel fuels are flammable liquids, their marking, packaging, transportation, storage and delivery acceptance shall comply with SH 0164, GB 30000.7-2013 and GB 190.

8 Safety

Automobile diesel fuels are flammable liquids, their hazard description and precautionary statement is given in Annex D of GB 30000.7-2013.

9 Standard implementation

This Standard has been implemented nationwide since the date of issuing, basing on the transition period requirements of gradual introduction. The transition period of the technical requirements specified in Table 2 is until December 31, 2016; since January 1, 2017, the technical requirements specified in Table 1 are abolished.