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

GB/T 42416-2023

M100 methanol fuel for motor vehicles

M100车用甲醇燃料

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Foreword

This document was issued on 23 May 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 September 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 42416-2023 covers M100 methanol fuel for motor vehicles - neat methanol with additives, burned in engines built for it rather than blended into gasoline. It fixes the terms that settle what M100 is, then the technical requirements together with the test methods that go with them in a single clause, the inspection rules that decide how a batch is sampled and judged, the marking, packaging, transportation and storage provisions, and a safety clause requiring that safety data covering transport, storage, use and accident handling travel with the product. The packaging clause lists what the container has to carry, beginning with the name of the manufacturer, so that a drum which has changed hands several times can still be traced back. Methanol is not gasoline: it attacks some metals and elastomers, carries water differently, and burns with a flame that is hard to see in daylight, so a fuel meeting a gasoline specification tells a vehicle owner nothing useful about it. Pairing each requirement with its test method in the same clause is what lets a producer, a distributor, a fleet operator and an inspectorate argue about a disputed result on the same terms. Written for methanol producers and blenders, fuel distributors, and the operators of methanol-fuelled vehicle fleets.

This document specifies the technical requirements, test methods, inspection rules,

marking, packaging, transportation, storage, and safety of M100 methanol fuel for motor vehicles.

This document is applicable to the production and inspection of M100 methanol fuel for motor vehicles.

2 Normative references

The following documents contain the provisions which, through normative reference in this document, constitute the essential provisions of this document. For the dated referenced documents, only the versions with the indicated dates are applicable to this document; for the undated referenced documents, only the latest version (including all the amendments) is applicable to this document.

GB 190 Packing symbol of dangerous goods

GB/T 338-2011 Methanol for industrial use

GB/T 511 Petroleum, petroleum products and additives - Method for determination of mechanical admixtures

GB/T 2013 Standard test method for density of liquid petrochemical products

GB/T 4472 Determination of density and relative density for chemical products

GB/T 4756 Method for manual sampling of petroleum liquids

GB/T 6283 Chemical products - Determination of water Karl - Fischer method (general method)

GB/T 6324.2 Test method of organic chemical products - Part 2: Determination of dry residue after evaporation on a water bath for volatile organic liquids

GB/T 6324.9 Test method of organic chemical products - Part 9: Determination of chloride

GB/T 7534 Volatile organic liquids for industrial use - Determination of boiling range

GB/T 8170 Rules of rounding off for numerical values & expression and judgment of limiting values

GB/T 14039 Hydraulic fluid power - Fluids - Method for coding the level of

contamination by solid particles

GB/T 16483 Safety data sheet for chemical products content and order of sections

GB/T 17476 Determination of multielement of lubricating oils and base oils -

Inductively coupled plasma atomic emission spectrometry (ICP-AES)

GB/T 20082 Hydraulic fluid power - Fluid contamination - Determination of particulate contamination by the counting method using an optical microscope

GB/T 23510 Fuel methanol for motor vehicles

GB/T 34100 Test method for determination of total sulfur in light hydrocarbons, spark ignition engine fuel, diesel engine fuel, and engine oil - Ultraviolet fluorescence method

GB/T 37322 Test method for evaluating gasoline cleanliness - Simulation test of intake valve deposit (IVD) of gasoline engine

NB/SH/T 0164 Petroleum and related products packaging, storage, transportation and acceptance of delivery rules

SH/T 0251 Determination of base number of petroleum products (perchloric acid potentiometric titration method)

SH/T 0604 Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method

SH/T 0657 Standard test method for trace nitrogen in liquid petroleum hydrocarbons by syringe/inlet oxidative combustion and chemiluminescence detection

SH/T 0712 Standard test method for iron in gasoline by atomic absorption spectroscopy

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 M100 methanol fuel for motor vehicles

Motor fuel that consists of methanol and additives.

c) When there is a change in the main raw material supplier, which may affect

the product quality;

d) When the production is resumed after continuous suspension for more than 3 months;

e) When the factory inspection results are quite different from the last type inspection results.

5.4 Result judgment

The inspection results are judged according to the rounded value comparison method in GB/T 8170. If any of the inspection results does not meet the requirements, for barreled products, samples shall be taken from double numbers of packaging units for re-inspection; for canned products, samples shall be taken at multiple points for re-inspection; if there are still re-inspection results that do not meet the requirements, the entire batch of products will be judged to be unqualified.

6 Marking, packaging, transportation, and storage

6.1 Product packaging containers shall be marked with firm marks, the contents of which include but are not limited to:

- a) the name of the manufacturer;
- b) the product name;
- c) the number of this document;
- d) the symbols of "Flammable liquid" and "Poison" specified in GB 190.

6.2 If the products that comply with this document are sold to users, they shall be marked with "M100 methanol fuel for motor vehicles", and the marks shall be marked in a place where consumers can easily see them.

6.3 Packaging, transportation, storage, and delivery acceptance shall be carried out in accordance with the relevant regulations of NB/SH/T 0164.

6.4 Products formulated with different types of additives shall not be mixed for storage and transportation.

7 Safety

7.1 Safety data and information related to the transportation, storage, use, and accident