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**Vehicle fuel methanol
(English Translation)**

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Foreword

This Standard is not equivalent to the American Society for Testing and Materials Standard ASTM D1152.2006 "Methanol" (English version).

Annex A of this Standard is informative.

This Standard was proposed by China Petroleum and Chemical Industry Association.

This Standard shall be under the jurisdiction of Subcommittee on Organic of National Technical Committee on Chemicals of Standardization Administration of China (SAC/TC 63 / SC 2).

The drafting organizations of this Standard. Changan University, China Petroleum & Chemical Corporation Beijing Research Institute of Chemical Industry, Xin'ao Group Co., Ltd., Southwest Chemical Research and Design Institute, Shanxi Wharton Industrial Co., Ltd., Shaanxi Changzheng New Energy Co., Ltd., Yankuang Group Co., Ltd., Jiangsu Nanda High-Tech Industry Co., Ltd., Pingmei Lantian Chemical Co., Ltd., Shaanxi Shenmu Chemical Industry Co., Ltd.

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Fuel methanol for motor vehicles

1 Scope

This Standard specifies the requirements, test methods, inspection rules as well as marks, packaging, transport, storage and safety of fuel methanol for motor vehicles.

This Standard is applicable to production, inspection and sales of fuel methanol for motor vehicles. This product is used as raw material of fuel methanol for motor vehicles.

Molecular formula. CH₄O

Structural formula. CH₃-OH

Relative molecular mass. 32.042 (according to 2007 international relative atomic mass)

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable.

For undated references, the latest edition of the referenced document applies.

GB 190, Packing symbol of dangerous goods

GB/T 601-2002, Chemical Reagent - Preparations of Standard Volumetric Solutions

GB/T 602-2002, Chemical Reagent - Preparations of Standard Solutions for

Impurity (ISO 6353-1.1982, NEQ)

GB/T 603-2002, Chemical Reagent - Preparations of Reagent Solution for

Use in Test (ISO 6353-1.1982, NEQ)

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

GB/T 3723, Sampling of chemical products for industrial use - Safety in sampling (GB/T 3723-1999, idt ISO 3165.1976)

GB/T 4472-1984, Determination of density and relative density for chemical products

GB/T 6283-2008, Chemical products - Determination of water Karl-fischer method (general method) (ISO 760.1978, NEQ)

3 Requirements

Fuel methanol for motor vehicles shall meet the technical requirements listed in Table 1.

4.1 Warning

Some test procedures specified in the test method may lead to dangerous situations. The operator shall take appropriate safety and protective measures.

4.2 General provisions

Unless otherwise stated, only reagents that are confirmed as analytically pure and Grade three water specified in GB/T 6682-2008 are used in the analysis.

4.3 Determination of appearance

Add experimental samples to a colorimetric tube. Visually observe under sunlight or fluorescent lamp.

4.7.1 Method summary

Sample is diluted by carbon dioxide free water. Use bromothymol blue as an indicator. When the sample is acidic, use sodium hydroxide standard titration solution to titrate free acid. When the sample is alkaline, use sulfuric acid

standard titration solution to titrate free base.

4.7.4.1 Use an equal volume of carbon dioxide free water to dilute laboratory

sample. Add (4~5) drops of bromo thymol blue indicator solution in identify. If it is yellow, it shall be acidic reaction, and measure the acidity. If it is blue, it shall be alkaline reaction, then measure the alkalinity.

4.8.1.3.1 Sample processing

Take 300mL of sample in porcelain evaporating dish. Use sodium hydroxide solution to adjust the pH to 8-9. Steam on a water bath to dry. Put in the muffle furnace. Burn at 600°C for 1h. Cool. Use 70mL of water to soak for 20min. Then use 30mL of water to rinse the evaporating dish in three times. Make quantitative transfer to a 250mL Erlenmeyer.

4.8.1.4 Result calculation

Chloride content w_3 , expressed in mg/L, is calculated according to equation (3).
where,

4.8.2.2 Analysis steps

Instruments and equipment, reagents and solutions, operating procedures and results calculation are performed in accordance with the first method of Annex C of GB 18350-2001.

4.9 Determination of sodium content

Perform the determination according to the provisions of GB/T 17476-1998. The preparation of sample is. Weigh two samples separately. Add appropriate amount of internal standard elements. Shake well. The recommended wavelength is 589.59 nm.

5.1.1 The exit-factory inspection items in Table 1 - appearance, density, boiling range, moisture, acidity or alkalinity - shall be inspected batch by batch.