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

GB/T 683-2006

Chemical reagents -- Methanol
(English Translation)

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Foreword

This Standard is not equivalent to ISO 6353-2:1983 "Reagents for chemical analysis -- Part 2: Specifications -- First series".

This Standard replaces GB/T 683-1993 "Chemical reagents. Methanol". Compared with GB/T 683-1993, the main changes are as follows.

- The water solubility test has been changed to the water mixing test (3.3 and 4.3.1 of Edition 1993; Chapter 4 and 5.4 of this Edition);
- The units for acidity and alkalinity have been adjusted from mmol/100 g to mmol/g, and the determination methods have been improved (3.3, 4.3.4, and 4.3.5 of Edition 1993; Chapter 4, 5.7, and 5.8 of this Edition);
- The specification for reducing potassium permanganate has been changed from qualified to no more than 0.0005%, and the storage time has been adjusted (3.3 and 4.3.8 of Edition 1993; Chapter 4 and 5.11 in this Edition).

This Standard was proposed by China Petroleum and Chemical Industry Association. This Standard shall be under the jurisdiction of Subcommittee on Chemical Reagents of National Technical Committee on Chemical of Standardization Administration of China (SAC/TC 63/SC 3).

The drafting organizations of this Standard. Sinopharm Chemical Reagent Co., Ltd.

Main drafters of this Standard. Chen Haoyun, Chen Hong.

This Standard was first published in 1965. It was first revised in 1979 and revised a second time in 1993.

Chemical reagent -- Methanol

WARNING -- Some of the testing procedures specified in the standard may lead to dangerous situations, and users are responsible for taking appropriate safety and health precautions.

Indicative formula. CH₃OH

Relative molecular mass *star*. 32.04 (based on the 2003 international relative atomic mass)

1 Scope

This Standard specifies the properties, specifications, test, inspection rules, packaging, and marking of methanol, a chemical reagent.

This Standard applies to the testing of methanol, a chemical reagent.

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/T 601, Chemical reagent -- Preparations of reference titration solutions

GB/T 602, Chemical reagent -- Preparations of standard solutions for impurity
(GB/T 602-2002, ISO 6353-1.1982, NEQ)

GB/T 603, Chemical reagent -- Preparations of reagent solutions for use in test methods (GB/T 603-2002, ISO 6353-1.1982, NEQ)

GB/T 606, Chemical reagent -- General method for the determination of water -- Karl Fischer method (GB/T 606-2003, ISO 6353-1.1982, NEQ)

GB/T 611-2006, Chemical reagent -- General method for the determination of density (ISO 6353-1.1982, NEQ)

GB/T 6682, Water for analytical laboratory use -- Specification and test methods (GB/T 6682-1992, eqv ISO 3696.1987)

GB/T 9722-2006, Chemical reagent -- General rules for the gas chromatography

GB/T 9733, Chemical reagent -- General method for the determination of carbonyl compounds (GB/T 9733-1988, eqv ISO 6353-1.1982)

GB/T 9736-1988, Chemical reagent -- General method for the determination of acidity and alkalinity (eqv ISO 6353-1.1982)

GB/ T 9737, Chemical reagent -- General rules for the measurement of readily carbonizable substances (GB/T 9737-1988, eqv ISO 6353-1.1982)

GB/T 9740, Chemical reagent -- General method for the determination of dry residue after evaporation (GB/T 9740-1988, eqv ISO 6353-1.1982)

GB 15258, General rules for preparation of precautionary label for chemicals

GB 15346, Chemical reagent -- Packaging and marking

HG/T 3921, Chemical reagent. Regulations for sampling and acceptance

3 Properties

This reagent is a colorless and transparent liquid that is miscible with water, alcohol, ether, etc.

4 Specifications

The specifications for methanol are shown in Table 1.

5.1 General provisions

Unless otherwise specified in this chapter, all standard titrants, standard solutions, preparations, and products used shall be prepared in accordance with the provisions of GB/T 601, GB/T 602, and GB/T 603. The water used in the tests shall meet Grade III water specifications in GB/T 6682. All samples shall be measured to an accuracy of 0.1 mL. All values expressed in "%" are mass fractions.

5.2 Content

The determination shall be made in accordance with the provisions of GB/T 9722-2006.

5.2.1 Determination conditions

Detector. flame ionization detector;

Carrier gas and flow rate. nitrogen, 4.3 cm/s;

Column length. 3 m;

Column inner diameter. 3 mm;

Stationary phase. GDX-104 [0.15 mm~0.18 mm (60 mesh ~ 80 mesh)] or similar

organic support 401 or Porapak Q;

Column temperature. 135°C;

Vaporization chamber temperature. 170°C;

Detection chamber temperature. 170°C;

Injection volume. 0.2 µL;

Resolution of difficult-to-separate substance pairs $R \geq 1.5$ (ethanol and methanol);

Asymmetry factor. $f \leq 1.5$;

Effective column height. $H_{eff} \leq 3.0$ mm;

Relative retention values of components relative to the bulk. rethanol, methanol = 2.6;

rpropanol,

methanol = 5.6.

5.2.2 Quantitative method

Calculate according to 9.2 of GB/T 9722-2006. Where. fethanol, methanol = 0.65; fethanol,

methanol = 0.61.

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