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

GB 338-2011

**[GB/T 338-2011] Methanol for industrial use
(English Translation)**

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Foreword

Provisions in Chapter 6.1 of this Standard are mandatory, and the others are recommendatory.

This Standard is drafted according to the rules given in GB/T 1.1-2009.

This Standard replaces GB 338-2004 Industrial Methanol. Compared with GB 338-2004, the main technical changes in this Standard are as follows.

- Modified the preparation method of this Standard colorimetric solution used for the potassium permanganate time test (see Chapter 4.7 of this edition; and Chapter 4.4 of Edition 2004);
- Added the correction formula for the readings of the full immersion thermometer and the mercury barometer used in the boiling range determination method (see Annex C of this edition);
- Modified the test method for the determination of ethanol content (see Chapter 4.14, Annex D of this edition; and Chapter 4.11 of Edition 2004);
- Modified the factory inspection items (see Chapter 5.1 of this edition; and Chapter

5.1 of Edition 2004).

Using re-drafting method, this Standard modifies-adopts the American Society for Testing Materials standard ASTM D1152.2006 Methanol. Compared with ASTM D1152.2006,

there are adjustments on the structure. Annex A lists out the Contrast List between chapter and article number in this Standard and ASTM D1152.2006. The technical differences and their reasons between this Standard and the ASTM D1152.2006 are as follows.

- Indicators are divided into superior products, first-class products and qualified products (see Chapter 3.2). Which is determined based on the classification guideline of the relevant industrial products in China;
- Added the water miscibility item and the ethanol content item (see Chapter 3.2). This is to strictly control the product quality;
- The color scale, boiling range, acid or alkali and other indicators of the superior products are better than those specified in ASTM D1152.2006 (see Chapter 3.2);
- In addition to the use of the method specified in the ASTM D1152.2006 for the sulfuric acid washing test, other test methods all adopt the national standards for products testing method of China (see Chapter 4).

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

This Standard shall be under jurisdiction of Branch of Organic Chemicals of National Standardization Technical Committee of Chemical (SAC/TC 63/SC 2).

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The previous editions replaced by this Standard are as follows.

- GB 338-1964, GB 338-1976, GB 338-1985, GB 338-1992, GB 338-2004.

Methanol for Industrial Use

1 Scope

This Standard specifies the requirements, test methods, inspection rules, marking, packaging, transportation, storage and safety of the methanol for industrial use.

This Standard applies to the methanol for industrial use compounded by coal, natural gas, light oil and heavy oil as the materials.

Molecular formula. CH₄O

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

2 Normative references

The articles contained in the following documents have become part of this Standard when they are quoted herein. For the dated documents so quoted, all the modifications (including all corrections) or revisions made thereafter shall be applicable to this Standard.

GB 190 Packing symbol of dangerous goods

GB/T 601 Chemical reagent - Preparations of standard volumetric solutions

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 3143 Color determination method of liquid chemicals (Hazen unit; Platinum-cobalt scale)

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

GB/T 6283 Chemical products - Determination of water Karl ·fischer method (general method) (GB/T 6283-2008, ISO 760:1978, NEQ)

GB/T 6324.1 Test method of organic chemical products - Part 1. Water miscibility test of liquid organic chemical products

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 6324.2-2004, ISO 759:1981, MOD)

GB/T 6324.3-2011 Test method of organic chemical products - Part 3. Determination of permanganate-reducing substances

GB/T 6324.5-2008 Test method of organic chemical products - Part 5.Determination of trace quantities of carbonyl compounds in organic chemicals

3.1 Character. Colorless clear liquid, without peculiar smell and odor, and without visible

impurities.

4.1 Warning

Some processes specified by the test method may lead to dangerous situations, so the operator shall take appropriate safety and protective measures.

4.2 General provisions

Unless otherwise specified, only confirmed analytically pure reagent and Grade-3 water met the GB/T 6682 are used in the analysis.

If there is no other requirements noted, the standard titration solution, preparations and products used in the analysis shall be prepared in accordance with provisions of GB/T 601 and GB/T 603.

4.6 Determination of boiling range

It shall be conducted according to the method specified in GB/T 7534. Distillation flask is of 100mL; indication range of the thermometer is 50°C - 70°C, with the division value of 0.1°C. For the correction of the full immersion thermometers and mercury manometer, see Annex C.

4.10.1 Method summary

The specimen is diluted by water that does not contain carbon dioxide, with the bromothymol blue as indicator;

4.11 Determination of carbonyl compounds content

It shall be conducted according to the specified provisions of 4.2 in GB/T 6324.5-2008.

Wherein the wavelength is 430 nm; Mass fraction w_2 of carbonyl compounds [calculated by formaldehyde (HCHO)], the value is expressed in %, calculated according to Equation (3).