

ICS 91.140.40
CCS P 47



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

GB 25035-2010

**Dimethyl ether for city gas
(English Translation)**

Issued on: September 2, 2010

Implemented on: July 1, 2011

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

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Foreword

Clauses 3.1, 3.3 of this standard are mandatory. The rest is recommended.

Appendix A and Appendix B of this standard are informative.

This standard was proposed by and shall be under the jurisdiction of the Ministry of Housing and Urban-Rural Development of the People's Republic of China.

Drafting organizations of this standard. China Municipal Engineering North China Design and Research Institute, Shandong Jiutai Chemical Technology Co., Ltd., Xinao Group Co., Ltd., Henan Anyang Qianyuan Group, Hanergy Holding Group Co., Ltd., Henan Blue Sky Group Co., Ltd., Southwest Chemical Research and Design Institute, Ningxia Baota Petrochemical Group Co., Ltd., Chongqing Neiyin Fuel Co., Ltd., Chongqing Chuanyi Analysis Instrument Co., Ltd., China City Gas Association, National Alcohol Ether Fuel and Alcohol Ether Automobile Professional Committee, National Gas Appliance Quality Supervision and Inspection center.

1 Scope

This standard specifies the requirements, test methods, inspection rules, marking, packaging, transportation, storage of dimethyl ether for city gas.

This standard applies to dimethyl ether for city gas used by urban residents, commercial and industrial enterprises.

2 Normative references

The provisions in following documents become the provisions of this standard through reference in this standard. For the dated references, the subsequent amendments (excluding corrections) 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 7376 Determination of micro-amounts of water in industrial fluorinated alkane

GB/T 10410 Analysis of manufactured gas and liquefied petroleum gas normal composition by gas chromatography

GB 14193 Rules for filling of liquefied gas cylinders

GB 18180 The requirements for the safety operation of gas carrier

GB 50016 Code of design on building fire protection and prevention

GB 50028 Code for design of city gas engineering

3.1 The quality of dimethyl ether for city gas shall meet the requirements of Table 1.

3.4 The odorant should be tetrahydrothiophene. The amount of odor shall be greater than 30 mg/m³.

4.1 The testing of the mass fraction of dimethyl ether and methanol in dimethyl ether for city gas may be carried out in accordance with the provisions of Appendix B.

4.2 The testing of quality fraction of water in dimethyl ether for city gas shall be carried out in accordance with the provisions of GB/T 7376.

5.1 Production inspection

When one of the following conditions occurs, the dimethyl ether for city gas shall be fully tested according to the requirements of Table 2.

5.2 Exit-factory inspection

When dimethyl ether for city gas is exit-factory, it shall be inspected according to the requirements of Table 2.

6.1 The facilities and accessories for storage, transportation, filling of dimethyl ether for city gas shall be resistant to the corrosion of dimethyl ether.

6.3 The marking and packaging of dimethyl ether for city gas shall be indicated of the words such as "flammable goods" and "no smoking".

6.4 Dimethyl ether for city gas may be transported in railway tankers, automobile tankers, cylinder cars, ship cabins or pipeline delivered.

6.5 The railway tankers, automobile tankers, ship cabins used for transporting dimethyl ether for city gas shall have the words such as "flammable goods" and "no smoking".

6.6 The storage place for dimethyl ether for city gas shall comply with the relevant provisions of GB 50016 and GB 50028.

Appendix A

(Informative)

Physical-chemical properties of dimethyl ether

The physical-chemical properties of dimethyl ether are as shown in Table A.1.

Appendix B

(Informative)

Gas chromatographic analysis method for dimethyl ether and methanol in dimethyl ether for city gas

B.1 Scope

This Appendix gives typical working conditions for gas chromatographic analysis of the mass fraction of dimethyl ether and methanol in dimethyl ether for city gas. It may also use other chromatographic conditions to achieve equivalent or higher analytical results.

B.2 Principle of method

Use a gas chromatograph which is equipped with a thermal conductivity detector (TCD) to, under selected chromatographic conditions, through a gas chromatographic column, separate dimethyl ether, methanol, carbon dioxide from the dimethyl ether sample for city gas. Use a detector to detect it. Use recorder, integrator or microprocessor to record the peak area data of each component.

B.3 Sampling

It is performed according to the provisions of GB/T 10410. The temperature of the gasification water bath is 70 °C ~ 90 °C.

B.4 Gas Chromatograph

Gas chromatograph which is equipped with thermal conductivity detector. It uses gas six-way valve injector to inject sample. The material is stainless-steel.

B.5 Standard gas

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