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

**GB/T 24768-2009**

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**1,4-Butanediol for industrial use**

工业用 1,4-丁二醇

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## Foreword

Annex A of this Standard is normative.

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 Chemistry of Standardization Administration of China (SAC/TC 63 / SC2).

Main drafting organization of this Standard: Shanxi Three-dimensional Group Co., Ltd.

Participating drafting organizations of this Standard: Sichuan Tianhua Fubang Chemical Co., Ltd., Dongying Victory Central Asia Chemical Co., Ltd., Xinjiang Meike Chemical Co., Ltd., Nanjing Blue Star Chemical New Material Co., Ltd.

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## 1 Scope

This Standard specifies the requirements, test methods, inspection rules and marks, packaging, transport and storage of 1,4-butanediol for industrial use.

This Standard is applicable to the production, inspection and sales of 1,4butanediol for industrial use.

Relative molecular mass: 90.15 (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/T 6682-2008, Water for analytical laboratory use - Specification and test methods (ISO 3696:1987, MOD) GB/T 8170, Rules of rounding off for numerical values & expression and judgement of limiting values GB/T 9722-2006, Chemical reagent - General rules for the gas chromatography

## 3 Requirements

### 3.1 Appearance: colorless transparent liquid, no visible impurities.

3.2 1,4-butanediol for industrial use shall meet the technical requirements in Table 1.

## 4 Test methods

### 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

### 4.3 Appearance

Take appropriate laboratory samples in a colorimetric tube and visually observe them under natural light.

### 4.4 Determination of 1,4-butanediol content

#### 4.4.1 Method summary

Under the selected chromatographic operating conditions, evaporate the sample and separate it on the column. Detect with flame ionization detector (FID). Quantify with calibration area normalization method.

#### 4.4.2 Reagents

**4.4.2.1 Nitrogen: volume fraction is greater than 99.999%.**

**4.4.2.2 Hydrogen: volume fraction is greater than 99.999%.**

Air: purified and dried by activated carbon, blue silica gel and 5A molecular sieve.

**4.4.2.4 Methanol: chromatographic pure.**

**4.4.2.5 Tetrahydrofuran: chromatographic pure.**

**4.4.2.6  $\gamma$ -butyrolactone: chromatographic pure.**

**4.4.2.7 Dimethyl succinate: chromatographic pure.**

**4.4.2.8 1,4-pentanediol: chromatographic pure.**

**4.4.2.9 2-methyl-1,4-butanediol: chromatographic pure.**

**4.4.2.10 1,6-hexanediol: chromatographic pure.**

**4.4.2.11 Butanol: chromatographic pure.**