

GB/T 26370-2020

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**GB**

NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA

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**GB/T 26370-2020**

Replacing GB/T 26370-2010

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**Hygienic Requirements for Disinfectant Containing  
Bromine**

含溴消毒剂卫生要求

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## Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009.

This Standard replaced GB/T 26370-2010 *Hygienic Standard for Disinfectants with Bromine*. Compared with GB/T 26370-2010, this Standard has the major technical changes as follows:

- Delete "Precautions" and "This Standard is not applicable the disinfectants combined the bromochloro-5,5-dimethylhydantoin or 1,3-dibromo-5,5-dimethylhydantoin with effective ingredients of other disinfectants" from the scope of the standard (see Clause 1 of 2010 Edition);
- Add the normative references (see Clause 2 of this Edition);
- Modify the terms and definitions of bromine-containing disinfectants (see 3.1 of this Edition; 3.1 of 2010 Edition);
- Delete the terms and definitions of general object surfaces (see 3.4 of 2010 Edition);
- Modify the raw material requirements (see Clause 4 of this Edition; Clause 4 of 2010 Edition);
- Delete the sensory attribute requirements (see 5.1 of 2010 Edition);
- Increase the mass fraction requirements of bromine and chlorine (see Table 1 of this Edition);
- Modify the requirements for the mass fraction of bromochloro-5,5-dimethylhydantoin, available halogen (by Cl) and loss on drying (see Table 1 of this Edition; Table 1 of 2010 Edition);
- Delete the available halogen reduction rate index requirements within the validity period (see Table 1 of 2010 Edition);
- Modify the requirements for the mass fraction of 1,3-dibromo-5,5-dimethylhydantoin, available bromine (by Br) and loss on drying (see Table 2 of this Edition; Table 2 of 2010 Edition);
- Delete the available bromine reduction rate index requirements within the validity period (see Table 2 of 2010 Edition);
- Increase the weight difference of the disinfectant product tablets produced by using bromochloro-5,5-dimethylhydantoin disinfectant or 1,3-dibromo-5,5-dimethylhydantoin disinfectant and other non-disinfecting factors (accessories);

# Hygienic Requirements for Disinfectant Containing Bromine

## 1 Scope

This Standard specifies the raw material requirements, technical requirements, application scope, use methods, inspection methods, packaging, transportation and storage, marking, labeling and instruction manual of bromine-containing disinfectants.

This Standard is applicable to disinfectants that use bromochloro-5,5-dimethylhydantoin or 1,3-dibromo-5,5-dimethylhydantoin as the bactericidal component.

## 2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this document.

GB/T 191 Packaging – Pictorial Marking for Handling of 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 6682 Water for Analytical Laboratory Use - Specification and Test Methods

GB/T 21845 Chemicals - Water Solubility Test

GB/T 23849 1,3-Dibromo-5,5-dimethylhydantoin

GB/T 23854 Bromochloro-5,5-dimethylhydantoin

Pharmacopoeia of the People's Republic of China (2015 Edition, Four Volumes)

Technical Standard for Disinfection (2002 Edition) [Ministry of Health (WFJF (2002) No.282]

## 3 Terms and Definitions

For the purpose of this document, the following terms and definitions apply.

### 3.1 disinfectant containing bromine

The disinfectant, after dissolving in water, can be hydrolyzed to generate hypobromous acid and has a sterilizing effect.

### 3.2 Available bromine

The amount of bromine equivalent to the oxidizing ability of bromine-containing disinfectant, and measuring the oxidizing ability of bromine-containing disinfectant.

NOTE: Its content is expressed by mass concentration (mg/L) or mass fraction (%).

### 3.3 Available halogen

The total amount of halogen equivalent to the oxidizing ability of halogen-containing disinfectants, and measuring the oxidizing ability of halogen-containing disinfectant.

NOTE: Its content is expressed by mass concentration (mg/L) or mass fraction (%).

## 4 Requirements for Raw Materials

**4.1** Bromochloro-5,5-dimethylhydantoin shall meet the technical index requirements for qualified products specified in GB/T 23854. If accessories are added, the accessories shall comply with relevant standards and regulations.

**4.2** 1,3-Dibromo-5,5-dimethylhydantoin shall meet the technical index requirements for qualified products specified in GB/T23849. If accessories are added, the accessories shall comply with relevant standards and regulations.

## 5 Technical Requirements

### 5.1 Physical and chemical index

#### 5.1.1 Bromochloro-5,5-dimethylhydantoin disinfectant

The mass requirements shall comply with the provisions of Table 1.

### **bromine content**

It shall be carried out as per Appendix B.

### **8.2 Determination of solubility**

It shall be carried out as per GB/T 21845.

### **8.3 Determination of loss on drying**

**8.3.1** 1,3-Dibromo-5,5-dimethylhydantoin disinfectant shall be carried out as per the method specified in GB/T 23849.

**8.3.2** Bromochloro-5,5-dimethylhydantoin disinfectant shall be carried out as per the method specified in GB/T 23854.

### **8.4 Determination of weight difference for tablets**

It shall be carried out as per the method stipulated in *The Pharmacopoeia of the People's Republic of China* (2015 Edition, Four Volumes).

### **8.5 Determination of the disintegration time limit of effervescent tablets**

It shall be carried out as per the method stipulated in *The Pharmacopoeia of the People's Republic of China* (2015 Edition, Four Volumes).

### **8.6 Determination of disinfection effect**

It shall be carried out as per *Technical Standard for Disinfection* (2002 Edition).

## **9 Packaging, Transportation and Storage**

### **9.1 Packaging**

It shall meet the requirements of GB/T 23849 or GB/T 23854.

### **9.2 Transportation**

During transportation, it shall not be mixed with other goods; and is forbidden to transport together with acids or alkalis, easily oxidized organic matter, and reducing substances. Covers shall be provided to prevent sunlight, rain, and moisture; and the packaging shall be kept intact and clearly marked.

### **9.3 Storage**

It shall be stored in a cool, dry place; protected from the sun, rain, and moisture. It is forbidden to store together with acids or alkalis and easily oxidized organics and

## Appendix A (Normative)

### Determination of Bromochloro-5,5-Dimethylhydantoin Content and Available Halogen (by Cl) Content

#### A.1 Principle

In acid solutions, bromine-containing disinfectants may oxidize potassium iodide to iodine. Use starch solution as indicator to titrate the generated iodine by sodium thiosulfate solution; and calculate the content of available halogen (by Cl) based on the consumed amount of sodium thiosulfate solution.

#### A.2 Reagents or materials

**Safety Tips: Sulfuric acid is a strong acid and is corrosive, so pay attention to it when using. When splashing on the body, rinse with plenty of water, avoid inhalation or contact with skin.**

Unless otherwise specified, the reagents used in this method are all analytically pure; and the test water is the Class-I water specified in GB/T 6682.

**A.2.1** Potassium iodide solution: 300g/L potassium iodide (analytically-pure) solution.

**A.2.2** Sulfuric acid solution: it is prepared by adding 1 portion of 95%~98% analytically-pure sulfuric acid to 5 portions of deionized water.

**A.2.3** Starch indicator: 10g/L starch solution, prepared according to GB/T 603.

**A.2.4** Sodium thiosulfate solution: 0.1mol/L sodium thiosulfate titrant, prepared and calibrated according to GB/T 601.

#### A.3 Apparatus

**A.3.1** Electronic analytical balance: accuracy of 0.1mg.

**A.3.2** Magnetic stirrer.

#### A.4 Test procedures

**A.4.1** Powders and granules may be weighed directly; and tablets are weighed after grinding with a dry mortar.

**A.4.2** Weigh 0.15g of sample (accurate to 0.0001g); add it to a dry and clean 250mL

## Appendix B (Normative)

### Determination of 1,3-Dibromo-5,5-Dimethylhydantoin Content and Available Bromine (by Br) Content

#### B.1 Principle

In acid solutions, bromine-containing disinfectants may oxidize potassium iodide to iodine. Use starch solution as indicator to titrate the generated iodine by sodium thiosulfate solution; and calculate the available bromine content and 1,3-dibromo-5,5-dimethylhydantoin content according to the consumed amount of sodium thiosulfate solution.

#### B.2 Reagents or materials

**Safety Tips: Sulfuric acid is a strong acid and is corrosive, so pay attention to it when using. When splashing on the body, rinse with plenty of water, avoid inhalation or contact with skin.**

Unless otherwise specified, the reagents used in this method are analytically-pure, and the test water is the Class-I water specified in GB/T 6682.

**B.2.1** Potassium iodide: analytically-pure.

**B.2.2** Sulfuric acid solution: it is prepared by adding 1 portion of 95% ~ 98% analytically-pure sulfuric acid to 8 portions of deionized water.

**B.2.3** Starch indicator: 5g/L starch solution, prepared according to GB/T 603.

**B.2.4** Sodium thiosulfate solution: 0.1mol/L sodium thiosulfate titrant, prepared and calibrated according to GB/T 601.

#### B.3 Apparatus

**B.3.1** Electronic analytical balance: accuracy of 0.1mg.

**B.3.2** Magnetic stirrer.

#### B.4 Test procedures

**B.4.1** Powders and granules may be weighed directly; and tablets shall be weighed after grinding with a dry mortar.



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