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PEOPLE'S REPUBLIC OF CHINA**

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**Sodium bicarbonate for industrial use
(English Translation)**

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1 Scope

This document specifies the classification, requirements, test methods, inspection rules, marking and accompanying documents, as well as packaging, transportation and storage of sodium bicarbonate for industrial use.

This document applies to sodium bicarbonate for industrial use produced by the natural alkali process, synthetic process, and double decomposition process.

NOTE: this product is mainly used in fine chemicals, daily chemicals, printing and dyeing, tanning, rubber, metallurgy, environmental protection, and metal surface treatment industries, etc.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of dated references, only the version with the specified date applies to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 191-2008 Packaging - Pictorial Marking for Handling of Goods

GB/T 3049-2006 Chemical Products for Industrial Use - General Method for Determination of

Iron Content - 1,10-Phenanthroline Spectrophotometric Method

GB/T 3050-2000 Inorganic Chemical Products for Industrial Use - General Method for

Determination of Chloride Content - Potentiometric Method

GB/T 3051-2000 Inorganic Chemical Products for Industrial Use - General Method for

Determination of Chloride Content - Mercurimetric Method

GB 5009.74 National Food Safety Standard - Method for Limit Test of Heavy Metals in Food Additives

GB 5009.76 National Food Safety Standard - Determination of Arsenic in Food Additives

GB/T 6678 General Principles for Sampling Chemical Products

GB/T 6682-2008 Water for Analytical Laboratory Use - Specification and Test Methods

GB/T 8170 Rules of Rounding off for Numerical Values & Expression and Judgment of Limiting Values

GB/T 23769-2009 Inorganic Chemical Products - General Method for the Determination of pH

Values

GB/T 23947.2 Inorganic Chemicals for Industrial Use - General Method for the Determination of Arsenic Content - Part 2.Gutzeit Method

GB/T 23950 General Methods for the Determination of Heavy Metals in Inorganic Chemical Products

HG/T 3696.1 Inorganic Chemicals for Industrial Use - Preparations of Standard and Reagent

Solutions for Chemical Analysis - Part 1.Preparations of Standard Volumetric Solutions

HG/T 3696.2 Inorganic Chemicals for Industrial Use - Preparations of Standard and Reagent

Solutions for Chemical Analysis - Part 2.Preparations of Standard Solutions for Impurity

HG/T 3696.3 Inorganic Chemicals for Industrial Use - Preparations of Standard and Reagent

Solutions for Chemical Analysis - Part 3.Preparations of Reagent Solutions

3 Terms and Definitions

This document does not have terms or definitions that need to be defined.

4 Molecular Formula and Relative Molecular Mass

Molecular formula. NaHCO_3

Relative molecular mass. 84.01 (based on the international relative atomic mass of 2022)

5 Classification

Sodium bicarbonate for industrial use is classified into three categories in accordance with its application.

---Class I. sodium bicarbonate for fine chemical industry;

---Class II. sodium bicarbonate for general industry;

---Class III. sodium bicarbonate for environmentally friendly industry.

6 Requirements

6.1

Appearance. white crystalline powder, partial agglomeration is permissible.

6.2

Sodium bicarbonate for industrial use shall conform to the provisions of Table 1 when tested in accordance with the test methods specified in this document.

7 Test Methods

WARNING. some reagents used in this test method are toxic or corrosive. Handle with extreme caution! If necessary, operate in a fume hood. If splashed on the skin or eyes, immediately rinse with water; under serious circumstances, immediately seek medical treatment.

7.1 General Provisions

Unless otherwise specified, all reagents and water used in this test refer to analytically pure reagents and Grade III water as specified in Table 1 of GB/T 6682-2008. Unless otherwise specified, standard titration solutions, impurity standard solutions, preparations and products used in the test shall be prepared in accordance with the provisions of HG/T 3696.1, HG/T

3696.2 and HG/T 3696.3.

7.2 Appearance Inspection

Under natural light, on a white-backed watch glass or white porcelain plate, use the visual inspection method to judge the appearance.

7.3.1 Principle

Dissolve the test portion in water, use bromocresol green-methyl red indicator solution as the indicator, and use standard hydrochloric acid titration solution for titration to determine the total alkali content.

7.5.2.2 Reagents or materials

7.5.2.2.1

Nitric acid solution. 1 + 1, prepared with analytical grade.

7.5.2.2.2

Nitric acid solution. 1 + 19, prepared with analytical grade.

7.5.2.2.3

Standard iron solution. 1 mL of solution contains 0.010 mg of iron (Fe). Use a pipette to take 1 mL of the iron standard stock solution prepared in accordance with HG/T 3696.2 into a 100 mL volumetric flask, use nitric acid solution (1 + 19) to dilute to the scale, and shake well.

Prepare this solution immediately before use.

7.5.2.2.4

Water. Grade II water conforming to the provisions of GB/T 6682-2008.

7.5.2.3 Instruments and equipment

Inductively coupled plasma optical emission spectrometer (ICP-OES).

7.5.2.4 Test procedures

7.5.2.4.1

Preparation of test solution

Weigh-take an appropriate amount of specimen (2 g for Class I and II, 0.5 g for Class III), accurate to 0.001 g, place it in a beaker, use a watch glass to cover it, add nitric acid solution (see 7.5.2.2.1), until the specimen dissolves, transfer all to a 50 mL volumetric flask, use nitric acid solution (see 7.5.2.2.2) to dilute to the scale, and shake well.

Simultaneously, and in the same way, prepare a blank test solution. Except that no