

ICS 67.220.20
CCS X 42



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

GB 25570-2010

**National food safety standards of food additives potassium
metabisulfite**

(English Translation)

Issued on: December 21, 2010

Implemented on: February 21, 2011

Issued by: Ministry of Health of the People's Republic of China

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Foreword

Appendix A of this standard is a normative appendix.

National Food Safety Standard Food additive potassium metabisulfite

1 Scope

This standard applies to a saturated solution of potassium hydroxide or potassium carbonate absorption of sulfur dioxide oxidation of sulfur and the production of food additives metabisulfite Potassium.

2 Normative reference standard

The standard file referenced in the application of this standard is essential. For dated references, only the dated edition of fitness for this standard. For undated references, the latest edition (including any amendments) applies to this standard.

3 Formula and relative molecular mass

Formula 3.1

$K_2S_2O_5$

3.2 Relative molecular mass

222.32 (according to 2007 international relative atomic mass)

4 Technical Requirements

4.1

Sensory requirements. comply with Table 1.

Table 1 Sensory requirements

Project requires test methods White or slightly yellow color proper amount of sample is placed in 50mL beaker was observed under natural light Color and texture. State organization crystalline powder

4.2

Physical indicators. to comply with Table 2.

Table 2. Physical and chemical indicators

Item Index Test Method Potassium metabisulfite (in $K_2S_2O_5$ dollars), w /% ≥ 93.0
 Appendix A A.4 Iron (Fe)/(mg/kg) ≤ 10 Appendix A A.5 Clarity through test A.6 in
 Appendix A Arsenic (As)/(mg/kg) ≤ 2 Appendix A A.7 Heavy metals (Pb)/(mg/kg) ≤ 5
 Appendix A A.8 Lead (Pb)/(mg/kg) ≤ 2 Appendix A A.9 Selenium (Se)/(mg/kg) ≤ 5
 Appendix A A.10 Appendix A (Normative) Testing method A.1 Warning Reagents The
 standard test methods used for toxic or corrosive, the operation should be careful as the
 water splashed on the skin should immediately Flushing, severe cases should immediately
 heal.

A.2 General Provisions the standard test methods used in the reagents and water, did not
 indicate when the other requirements, refer to analytically pure reagents and GB/T
 6682-2008 in Three water regulations. Used in the test standard titration solution, impurity
 standard solution, preparations and products, did not indicate when the other requirements,
 according to HG/T 3696.1, HG/T 3696.2, HG/T 3696.3 regulations of preparation.

A.3 Identification Test A.3.1 Reagents and materials A.3.1.1 hydrochloric acid.

A.3.1.2 hydrochloric acid solution. 13.

A.3.1.3 iodine solution. take 1.4 g iodine, placed in 10 mL of potassium iodide solution, add
 two drops of hydrochloric acid, dissolved in water and diluted to 100 mL, stored in Brown
 bottle stored.

A.3.1.4 mercury nitrate solution. take 15 g of mercury nitrate Asia, add 90 mL of water, 10
 mL solution of nitric acid (19) was dissolved, add a drop of mercury, dark Sealed and stored
 for later use.

A.3.2 Analysis step

A.3.2.1 Identification sulfite After the sample solution was added iodine solution that is
 faded yellow.

Aqueous hydrochloric acid solution was dropped after the sample has a sulfur dioxide gas
 to escape to Asia mercury nitrate solution infiltrating dipstick test, which was black.

A.3.2.2 Identification of potassium ions Infiltration of platinum wire with hydrochloric acid to colorless in the first combustion colorless flame. Then dipped a little sample solution in a colorless flame combustion, cobalt glass Observed was purple.

A.4 Determination of potassium metabisulfite A.4.1 Method summary in weak acid solution, the iodine sulfite oxidized to sulfate. Starch as indicator, titrated with sodium thiosulfate standard solution titration Excess iodine.

A.4.2 Reagents and materials A.4.2.1 glacial acetic acid. 13.

A.4.2.2 iodine standard solution. $c(1/2I_2) \sim 0.1 \text{ mol/L}$.

A.4.2.3 sodium thiosulfate standard titration solution. $c(Na_2S_2O_3) = 0.1 \text{ mol/L}$.

A.4.2.4 soluble starch solution. 5 g/L.

A.4.3 Analysis step

Pipette 50 mL of iodine standard solution and placed iodine bottle. Weigh about 0.2 g samples, accurate to 0.000 2 g, was added to the iodine solution, add Plug, seal, place 5 min in the dark. When added 5 mL glacial acetic acid, sodium thiosulfate standard titration solution titration, near the end, add 2mL soluble starch solution and continue titration to the disappearance of the blue solution as the end point. At the same time a blank test.

In addition to the blank test without the sample, the addition of reagents and other operations of the kind and amount (other than the standard titration solution) with the same measurement sample.

A.4.4 Calculation Results Potassium metabisulfite ($K_2S_2O_5$) mass fraction w_1 and its value is expressed in%, according to formula (A.1) Calculated.

c_{MVV}

$w(A.1)$

Where.

Numerical sodium thiosulfate standard titration V_0 -- blank test solution consumed volume in milliliters (mL);

Numerical sodium thiosulfate standard titration solution consumed V_1 -- titration solution volume in milliliters (mL);

Accurate c -- sodium thiosulfate standard titration solution concentration value in units of moles per liter (mol/L);

m -- sample mass value in grams (g);

Numerical M -- potassium metabisulfite ($1/4K_2S_2O_5$) molar mass in grams per mole (g/mol) ($M = 55.58$).

Take the arithmetic mean of the parallel determination results of the measurement results, the results of two parallel determination of the absolute difference is not more than 0.2%.

A.5 Determination of iron A.5.1 Reagents and solutions with GB/T 3049-2006 Chapter 4
A.5.2 Instruments and Equipment with GB/T 3049-2006 of Chapter 5 A.5.3 Analysis step
A.5.3.1 draw the curve According to GB/T 3049-2006 6.3 using 1cm path length cuvette and the corresponding amount of iron standard solution, drawing working curve.

A.5.3.2 Preparation of test solution Weigh about 2g samples, accurate to 0.01g. 250mL beaker and placed on a high type, with a small amount of water dissolved, 25mL hydrochloric acid solution in a boiling water bath Evaporated to dryness. The residue was dissolved in water, all transferred to 250mL volumetric flask, dilute with water to the mark.

A.5.3.3 Preparation of the blank test solution High type in 250mL beaker, add a small amount of water, plus 25mL of hydrochloric acid in a boiling water bath to dryness, the residue was dissolved in water, all moved 250mL Volumetric flask, dilute to the mark, shake.

A.5.3.4 Determination Pipette 50.00mL test solution and the blank test solution were placed in 100mL flask, the following according to GB/T 3049-2006 of 6.4.1 from the "if necessary, add water to 60mL" to get started.

A.5.4 Calculation Results Iron content of iron (Fe) mass fraction w_2 and its value in mg/kg according to formula (A.2) Calculated.

() 3212 1025050 - xx - = mmw (A.2) where.

Numerical test solution iron quality m_1 -- from the working curve of Richard, in milligrams (mg);

Numerical blank test solution of iron in quality from the working curve m_2 -- Richard, in units of milligrams (mg);

m - mass of the sample value in units of grams (g).

Take the arithmetic mean of the parallel determination results of the measurement results. Two parallel determination results of absolute difference is not more than 2mg/kg.

A.6 Determination of Clarity A.6.1 Reagents and materials A.6.1.1 nitric acid solution. 13.

A.6.1.2 silver nitrate solution. 20 g/L.

A.6.1.3 soluble starch solution. 20 g/L.

A.6.1.4 hydrochloric acid standard solution. $c(\text{HCl}) = 0.1 \text{ mol/L}$.

A.6.1.5 chlorine standard stock solution. 1 mL solution of chlorine (Cl) 1 mg;

Pipette 14.1 mL standard solution of hydrochloric acid, a 50mL volumetric flask, dilute to the mark.