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

GB 25540-2010

**The national food safety standards of food additives
Acesulfame potassium
(English Translation)**

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Foreword

Appendix A of this standard is a normative appendix.

National Food Safety Standard Food additives acesulfame potassium

1 Scope

This standard applies to acetylating agent, fuming sulfuric acid or sulfur trioxide, potassium hydroxide or potassium carbonate as raw materials obtained food additives Additives acesulfame potassium.

2 Normative references

The standard file referenced in the application of this standard is essential. For cited documents with dates, only the date of Version applies to this standard. For undated references, the latest edition (including any amendments) applies to this standard.

3 Formula, relative molecular mass and structural formula

Formula 3.1

$C_4H_4KNO_4S$

3.3 Relative molecular mass

201.24 (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 Color and texture colorless crystals or white crystalline powder proper amount of sample in a clean, dry white porcelain dish, self However, to light, to observe its color and texture, and smell its flavor. Odour odorless

4.2

Physical indicators. to comply with Table 2.

Table 2. Physical and chemical indicators

Item Index Test Method Acesulfame potassium (dry basis), w /% 99.0 ~ 101.0 Appendix A
A.3 Loss on drying, w /% ≤ 1.0 GB 5009.3-2010 a direct drying pH 5.5 ~ 7.5 in Appendix
A A.4 Fluorides (as F)/(mg/kg) ≤ 3 GB/T 5009.18-2003 fluoride ion selective electrode
method Organic impurities/(mg/kg) ≤ 20 Appendix A A.5 Lead (Pb)/(mg/kg) ≤ 1 GB
5009.12 a drying temperature and time are 105 °C and 2 h.

Appendix A

(Normative)

Testing method

A.1 General Provisions Unless otherwise indicated in the analysis using only recognized as analytical reagents and GB/T 6682-2008 specified in the water. In the analysis Standard titration solution, impurities measured by standard solution, preparations and products, did not indicate when the other requirements, according to GB/T 601, GB/T 602, the provisions of preparation GB/T 603's. This solution was used in the test does not indicate what is formulated with solvent, it refers to an aqueous solution.

A.2 Identification Test A.2.1 UV absorption Take 0.01g sample was dissolved in 1000 mL of water, and the solution has a maximum absorption at a wavelength of 227 nm at 2nm disabilities.

A.2.2 color reaction Take 0.3g sample is added 1mL of glacial acetic acid and 5mL water, dissolved, and then dropping a few drops at a concentration of 100g/L solution of sodium cobalt nitroso (now Existing service), which generates a yellow precipitate.

A.3 Determination of acesulfame potassium A.3.1 Reagents and materials

a) glacial acetic acid.

b) acetic anhydride.

c) perchloric acid standard titration solution. $c(\text{HClO}_4) = 0.1\text{mol/L}$.

d) crystal violet indicator solution. 5g/L.

e) of acetic anhydride. Take appropriate amount of glacial acetic acid, water content calculation, 1g of water plus 5.22g of acetic anhydride.

A.3.2 Analysis step

Weigh 0.2g ~ 0.3g dried (105 °C, 2 h) after the sample to the nearest 0.000 2g, placed in 250mL Erlenmeyer flask with 50mL of anhydrous acetic acid was dissolved (dissolution may be slow). Add 2 to 3 drops of crystal violet indicator solution, titration with perchloric acid standard solution titration to dissolve Blue-green liquid, and to maintain constant color 30s, is the titration end point. While doing the blank test.

A.3.3 Calculation Results Acesulfame potassium content X1 according to formula (A.1) Calculated.

() 1002012.0

$VVcX\%$ (A.1)

Where.

Content X1-- acesulfame potassium,%;

The actual concentration c -- perchloric acid standard titration solution, expressed in moles per liter (mol/L);

V_1 -- sample consumption perchloric acid standard titration solution volume in milliliters (mL);

V_0 -- blank sample consumption of perchloric acid standard titration solution volume in milliliters (mL);

0.2012--1 mmol acesulfame potassium ($\text{C}_4\text{H}_4\text{KNO}_4\text{S}$) in grams;

Quality m_1 -- sample (dry basis) in grams (g).

The results parallel arithmetic mean of the measurement results shall prevail. Twice in the same condition absolutely independent determination results the difference is not more than 0.2% of the arithmetic mean.

A.4 pH measurement

Weighed amount of sample, formulated at a concentration of 10mg/mL solution with a pH meter.

A.5 Determination of organic impurities A.5.1 Reagents and materials

a) Ethylparaben. standard.

b) acetonitrile. chromatography.

c) tetrabutyl ammonium hydrogen sulfate (TBAHS) solution. 0.01mol/L.

A.5.2 Instruments and Equipment

a) high performance liquid chromatography;

b) Detector. UV detector or diode array detector, detection wavelength of 227nm.

A.5.3 reference chromatographic conditions

a) Column. 25cm x 4.6mm (id) stainless steel column, or other equivalent column; filled with reversed phase C18 silica gel, particle size 3 μ m ~ 5 μ m, or other equivalent material properties.

b) Mobile phase. acetonitrile .0.01mol/L tetrabutyl ammonium hydrogen sulfate (TBAHS) solution of 40.60 (volume ratio).

c) Column temperature. 25 °C.

d) Flow rate. about 1mL/min.

e) Injection volume. 20 μ L.

NOTE: The chromatographic separation is not less than the system can be separated under the conditions acesulfame potassium and ethylparaben.

A.5.4 Analysis step

A.5.4.1 Preparation of sample solution A sample solution preparation water, a sample concentration of 10 g/L.

A.5.4.2 diluted solution prepared the dilution of the sample, diluted solution of a concentration of 0.2mg/L.

A.5.4.3 Determination Under the above chromatographic conditions, the sample was subjected to chromatography to obtain a chromatogram. If the triple acesulfame Potassium elution time there are other peaks in addition to the main peak of acesulfame K, then the analysis of the diluted solution was chromatographed to give first Two chromatograms.

A.5.5 results found

In times of acesulfame potassium elution time, the first chromatogram in addition to the main peak of other acesulfame potassium peak area and shall not exceed the second chromatogram peak area of acesulfame potassium.