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

GB 29939-2013

Food additive -- Disodium succinate

食品添加剂 琥珀酸二钠

(English Translation)

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1 Scope

This standard applies to succinic acid as the main raw material, and, drying process to obtain food additive disodium succinate.

2 Molecular formula, relative molecular mass and structural formula

Formula 2.1

Disodium (anhydrous product). $C_4H_4Na_2O_4$ Disodium succinate (crystalline product).
 $C_4H_4Na_2O_4 \cdot 6H_2O$

2.2 Formula

0 or $n = 6$

2.3 Relative molecular mass

Disodium (anhydrous product). 162.05 (according to 2007 international relative atomic mass) Disodium succinate (crystalline product). 270.14 (according to 2007 international relative atomic mass)

3.1 Sensory requirements

Sensory requirements shall comply with the requirements of Table 1.

Table 1 Sensory requirements

Project requires test methods Colorless or white color Take the right amount of sample is placed within the white porcelain plate, under natural light, to observe the color Chak and status, and to smell the odor State or crystalline powder Odour No smell, no odor

3.2 Physical and Chemical Indicators

Physical and chemical indicators should be consistent with the provisions of Table 2.

Table 2. Physical and chemical indicators

project

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Testing method

Anhydrous crystalline product products Disodium succinate ($C_4H_4Na_2O_4$) content (dry Base count), w /% 98.0 ~ 101.0 Appendix A A.3 Loss on drying, w /% 37.0 ~ 41.0 ≤ 2.0 GB 5009.3 a direct drying pH (50 g/L solution) 7.0 ~ 9.0 GB/T 9724 Sulfate (SO_4 dollars) by testing in Appendix A A.4 Easy oxides by test A.5 in Appendix A Heavy metals (Pb)/(mg/kg) ≤ 20 GB/T 5009.74 Total arsenic (As)/(mg/kg) ≤ 3 GB/T 5009.11 a drying temperature and time were $120\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and 2 h.

Appendix A

Testing method

A.1 General Provisions Unless otherwise specified in this standard, the use of analytical reagent purity should be more than the standard titration solution, standard solution for measuring impurities, Preparations and products, should be GB/T 601, GB/T 602, the provisions of the preparation of GB/T 603, the test water should be consistent with GB/T 6682-2008 in three water Provisions. Solution was used in the tests did not indicate what is formulated with solvent, it refers to an aqueous solution.

A.2 Identification Test A.2.1 After taking a platinum wire, with a 10% hydrochloric acid solution wet, dipped into the sample, in a colorless combustion flame, the flame that was yellow.

A.2.2 sample solution adjusted with 0.1% hydrochloric acid solution (1 g sample was dissolved in 20 mL of water) to pH 6 to 7, of this solution 5 mL, 1 mL of Ferric chloride solution (1 g ferric chloride dissolved in 10 mL of water) to produce a brown precipitate.

A.3 Determination of the content of disodium succinate A.3.1 Reagents and materials

A.3.1.1 glacial acetic acid.

A.3.1.2 crystal violet indicator solution. 5 g/L.

A.3.1.3 perchloric acid standard titration solution. $c(HClO_4) = 0.1\text{ mol/L}$.

A.3.2 Analysis step

Weigh 2 h pre-dried sample $120\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ 0.15 g, accurate to 0.0001 g, was dissolved in 30 mL of glacial acetic acid was added 1 mL crystallization Violet indicator solution, titration

with perchloric acid standard solution titration until the color of the solution from purple through blue to green, is the titration end point. Simultaneously Line blank titration test.

A.3.3 Calculation Results Disodium succinate content mass fraction w_1 according to formula (A.1) Calculated.

() 02100001 xxx

xx= m

McVVw - (A.1)

Where.

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

V0-- blank test consumption volume perchloric acid standard titration solution, in milliliters (mL);

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

Molar mass M-- disodium succinate, in units of grams per mole (g/mol) [M (C₄H₄Na₂O₄) = 162.05];

Quality m-- sample in grams (g);

1000-- conversion factor;

2-- conversion factor.

The results parallel arithmetic mean of the measurement results shall prevail. Two independent determination results obtained under the repeatability condition of absolute difference is not Greater than 0.5%.

A.4 Determination of sulfates A.4.1 Reagents and materials A.4.1.1 hydrochloric acid solution. 13.

A.4.1.2 sulfuric acid solution. 0.005 mol/L.

A.4.1.3 barium chloride solution. Weigh barium chloride 12 g, dissolved in water and dilute the volume to 100 mL.

A.4.2 Analysis step

Weigh the sample 1.0 g, placed in 50 mL colorimetric tube, add 30 mL of water was dissolved by adding hydrochloric acid solution 1 mL, diluted with water to 50 mL, this is the sample solution. Another a colorimetric tube, sulfuric acid solution was added 0.40 mL, hydrochloric acid solution 1 mL, diluted with water to 50 mL, this is the control solution. If the solution is Enough to clarify, the solution was filtered then two under the same conditions. Barium chloride were added to a solution of 2 mL, placed 10 min after mixing,

on a black background Compare the turbidity of the color from the top than the tube.
Sample turbidity is less than or equal to control turbidity, through tests.

Determination A.5 Easy oxides A.5.1 Reagents and materials A.5.1.1 sulfuric acid solution.

Measure 1 mL of sulfuric acid was slowly poured into 20 mL of water, and mix.

A.5.1.2 potassium permanganate solution. 0.02 mol/L.

A.5.2 Analysis step

Weigh 2.0 g sample add 20 mL of water and 30 mL of sulfuric acid solution to dissolve. Was added 4.0 mL of potassium permanganate solution, the pink solution in 3 min Without fade, through tests.