



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

GB 1886.97-2015

**National Food Safety Standard -- Food Additive -- Disodium
5-inosine**

食品安全国家标准 食品添加剂 5'-肌苷酸二钠

(English Translation)

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1 Scope

This standard applies to starch, sugar quality as raw material by fermentation or enzymatic method were food additives disodium 5'-inosine monophosphate.

2.1 Chemical Name

Inosine 5'-monophosphate disodium Formula 2.2 $C_{10}H_{11}N_4Na_2O_8P \cdot nH_2O$

2.4 Relative molecular mass

392.17 (as anhydrous) (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 Color status odor white Crystal or crystalline powder with special flavor Take appropriate sample is placed in a clean, dry white porcelain dish, under natural light, Views the review of its color and texture, smell it

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

Item Index Test Method Disodium 5'-inosine monophosphate content (dry basis), w /% 97.0 ~ 102.0 Appendix A A.2 Water, w /% ≤ 29.0 GB 5009.3-2010 a Karl Fischer method pH

(5% solution) 7.0 to 8.5 Appendix A A.3 Other nucleotides by test A.4 in Appendix A
 Arsenic (As)/(mg/kg) $\leq$ 2.0 GB 5009.76 Heavy metals (Pb)/(mg/kg) $\leq$ 10.0 GB 5009.74
 UV absorbance ratio 250nm/260nm 280nm/260nm 1.55 ~ 1.65 0.20 to 0.30 Appendix A A.5
 the maximum absorption wavelength/nm 250 ± 2 A.6 in Appendix A Transmittance (5%
 aqueous) /% $\geq$ 95.0 A.7 Appendix A a sample was weighed 0.05g, accurate to 0.1mg.

Appendix A

Testing method

A.1 General Provisions this standard reagents and water in the absence of other specified requirements, refer to the three water analytical reagent and GB/T 6682 regulations. test in the standard solution, standard solution for measuring impurities, formulations and products, did not indicate when the other requirements according to GB/T 601, GB/T 602 with and the provisions of GB/T 603 was prepared. Solution was used in the tests did not indicate what is formulated with solvent, it refers to an aqueous solution.

Determination A.2 5'- inosinic acid disodium content (dry basis) of A.2.1 Reagents and materials Hydrochloric acid solution. 0.01mol/L.

A.2.2 Instruments and Equipment UV spectrophotometer.

A.2.3 Analysis step

A.2.3.1 Preparation of sample solution A.2.3.1.1 Weigh the sample 0.5g (accurate to 0.1mg), dissolved in hydrochloric acid solution (A.2.1) and dilute to 500mL, shake.

A.2.3.1.2 draw solution (A.2.3.1.1) 5mL, with diluted hydrochloric acid solution (A.2.1) and dilute to 250mL, shake, as the sample solution spare.

A.2.3.2 Determination the sample solution (A.2.3.1.2) injection 10mm quartz cuvette with hydrochloric acid solution (A.2.1) as blank, ultraviolet spectrophotometer Absorbance was measured at 250nm.

A.2.4 Calculation Results Disodium 5'-inosine monophosphate content (dry basis) of the mass fraction w_1 , according to equation (A.1) Calculated.

$310 \times$

$100 - w_2 \times$

$100\% (A.1)$

Where.

A --- absorbance at 250nm;

310 --- 5'-inosinic acid disodium absorbance ratio;

250 --- volume of the sample solution, in milliliters (mL);

M --- the quality of the sample, in grams (g);

--- Water Quality w2 of the sample fraction, %.

Two independent determination results in the absolute difference obtained under repeatability conditions shall not exceed 1% of the arithmetic mean.

A.3 pH measurement

A.3.1 Instruments and Equipment pH meter.

A.3.2 Analysis step

Weigh the sample 1.0g, was added 20mL of water to dissolve, the solution was measured by pH meter pH.

A.3.3 allowable difference the two independent determination results obtained under the repeatability condition must not exceed the difference between the 0.2.

A.4 Determination of other nucleotides A.4.1 Reagents and materials A.4.1.1 Expand solution. saturated ammonium sulfate solution. water = 3.7.

A.4.1.2 paper. paper chromatography.

A.4.2 Instruments and Equipment A.4.2.1 ultraviolet analyzer.

A.4.2.2 micro syringe.

A.4.3 Analysis step

Weigh the sample 1.0g, dissolved in water and dilute to 100mL, on the chromatographic paper spotted 10.0μL, to expand the solution made about 30cm, dry (or drying) after the filter paper was observed in the UV at 254nm analyzer.

A.4.4 determination

If only presents a spot, for the 5'-inosinic acid disodium determined to be qualified, otherwise judged to be unqualified.

A.5 Determination of ultraviolet absorbance ratio A.5.1 Instruments and Equipment UV spectrophotometer.

A.5.2 Analysis step

The sample solution (A.2.3.1.2) injection 10mm quartz cuvette to 0.01mol/L hydrochloric acid solution (A.2.1) as blank were measured Set at a wavelength of 250nm, 260nm, 280nm absorbance under.

A.5.3 Calculation Results UV absorbance ratio X1 (250nm/260nm) and X2 (280nm/260nm), respectively, according to equation (A.2) and (A.3) Calculated.

Where.

A1 --- absorbance at a wavelength of 250nm under;

A2 --- absorbance at a wavelength of 260nm under;

A3 --- absorbance at a wavelength of 280nm under.

Two independent determination results in the absolute difference obtained under repeatability conditions shall not exceed 1% of the arithmetic mean.

A.6 Determination of maximum absorption wavelength A.6.1 Instruments and Equipment
UV spectrophotometer.

A.6.2 Analysis step

The sample solution (A.2.3.1.2) injection 10mm cuvette to 0.01mol/L hydrochloric acid solution (A.2.1) as blank, in 220nm ~ 320nm wavelength Determination of absorption.

A.7 Determination of light transmittance A.7.1 Instruments and Equipment
Spectrophotometer.

A.7.2 Analysis step

Weigh the sample 1g (accurate to 0.1mg) was dissolved in 20mL of water, stir well. Then, the sample was placed in 10mm cuvettes with water as a blank control, the test sample solution transmittance at 430nm, the readings are recorded.

A.7.3 allowable difference Two independent determination results in the absolute difference obtained under repeatability conditions shall not exceed 0.5% of the arithmetic mean.