



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

GB 1886.218-2016

Replacing GB 7655.2-2005

Food additive -- Brilliant blue aluminum lake

食品安全国家标准 食品添加剂 亮蓝铝色淀

(English Translation)

Issued on: August 31, 2016

Implemented on: January 1, 2017

Issued by: National Health and Family Planning Commission

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Foreword

This standard replaces GB 7655.2-2005 "food additive Brilliant blue aluminum lake." this standard compared with GB 7655.2-2005, the main changes are as follows.

--- Standard name was changed to "national food safety standards for food additives bright blue aluminum lake";

--- Increasing the chemical name, molecular weight;

--- Modify the content of the indicator;

--- Index name Appearance modify sensory requirements, modify the index requirements;

--- Hydrochloric acid and ammonia water insolubles Index name changed to hydrochloric acid insoluble matter was revised test methods;

--- Heavy Metals (as Pb) Index name changed to lead, to modify the index requirements and test methods;

--- Remove the drying loss, vice dye, barium index requirements and test methods;

--- Modify the identification test testing methods;

--- Revised test methods for arsenic.

National Food Safety Standard Food Additives bright blue aluminum lake

1 Scope

This standard applies to food additives and bright blue aluminum as raw materials by lake and prepared food additive Brilliant blue aluminum lake.

2.1 Chemical Name

3- [N- Ethyl -N- [4 - [[4- [N- Ethyl -N- (3- sulfo-benzyl) - amino] phenyl] (2-sulfophenyl) methylene] -2,5-cyclohexadiene Yl-1-ylidene] methyl amino] -, disodium salt of benzenesulfonic acid aluminum lake.

2.2 Relative molecular mass

792.85 (with bright blue meter) (according to 2013 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 blue State powder Take the right amount of sample is placed in a clean, dry white porcelain dish, self Under natural light, observe its color and status

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 Bright blue content, w /% in line with claims in Appendix A A.4 Hydrochloric acid insoluble matter, w /% $\leq$ 0.5 A.5 in Appendix A Arsenic (As)/(mg/kg) $\leq$ 3.0 GB 5009.11 or GB 5009.76 Lead (Pb)/(mg/kg) $\leq$ 5.0 GB 5009.12 or GB 5009.75 Appendix A Testing method A.1 Safety Tips Reagents The standard test methods used for toxic or corrosive, the operation should take appropriate safety and health practices.

A.2 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 Used 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, GB/T 603 provisions prepared. Solution was used in the tests did not indicate what is formulated with solvent, it refers to an aqueous solution.

A.3 Identification Test A.3.1 Reagents and solutions A.3.1.1 sulfuric acid solution. 120.

A.3.1.2 hydrochloric acid solution. 14.

A.3.1.3 sodium hydroxide solution. 100g/L.

A.3.1.4 ammonium acetate solution. 1.5g/L.

A.3.1.5 activated carbon.

A.3.2 Instruments and Equipment A.3.2.1 Spectrophotometer.

A.3.2.2 cuvette. 10mm.

A.3.3 Analysis step

A.3.3.1 color reaction Weigh about 0.1g sample, add 5mL sulfuric acid solution continuously shaken in a water bath and heated for about 5min, the solution was blue, after cooling, to take on Clarification layer drops 2 drops to 3 drops, add 5mL water, continued to show blue.

A.3.3.2 aluminum reaction Weigh about 0.1g sample, add 5mL hydrochloric acid solution and heated in a water bath, so that most of the dissolved. Add 0.5g of activated carbon, shake well Uniform, cooled and filtered. Take a colorless filtrate, add sodium hydroxide solution and after rendering aluminum reaction.

A.3.3.3 maximum absorption wavelength Weigh about 0.1g sample, add sulfuric acid solution 5mL, heated and dissolved in a water bath after the full mix, add ammonium acetate solution equipped to 100mL.

Centrifuged the solution is not clarified. Then take this solution 1mL ~ 5mL, plus ammonium acetate solution equipped to 100mL. Spectrophotometer 10mm cuvette to be measured, a maximum absorption wavelength of this solution is 628nm ~ 632nm.

Note: The measured absorbance should be 0.3 to 0.7, otherwise adjust the sample concentration.

A.4 Determination of bright blue Content A.4.1 Titanium trichloride titration (Arbitration Act)

A.4.1.1 Method summary in acidic medium, light blue is titanium trichloride reductive decomposition, according to the consumption of titanium trichloride standard titration solution, calculate its content.

A.4.1.2 Reagents and materials A.4.1.2.1 sodium bitartrate.

A.4.1.2.2 titanium trichloride standard titration solution. $c(\text{TiCl}_3) = 0.1\text{mol/L}$ (now with the existing, method of preparation see Appendix B).

A.4.1.2.3 sulfuric acid solution. 120.

A.4.1.2.4 Carbon dioxide. content $\geq 99\%$.

A.4.1.3 instruments and equipment Titanium trichloride titration apparatus shown in Figure A.1.

Explanation.

A --- conical flask (a 500 mL);

B --- brown burette (50mL);

C --- package under glass bottle of black paper (2000mL);

D --- containing ferrous sulfate and ammonium carbonate equivalent mixture container (5000mL);

E --- piston;

F --- bottles;

G --- washing bottle filled with water.

Figure A.1 apparatus of FIG titanium trichloride titration

A.4.1.4 analysis step Weigh about 2g sample (accurate to 0.0001g), placed in 500mL conical flask, sulfuric acid solution 20mL and 50mL freshly boiled of water and cooled to room temperature, and constantly shaken water bath heated to dissolve, was added 15g sodium hydrogen tartrate and 150mL of freshly boiled water, shaking After dissolution, according to Figure A.1 instrument installed at the level of carbon dioxide introduced into the same time, heated to boiling, and treated with titanium trichloride standard titration solution drop Given the inherent color of the sample solution to disappear as the end point.

A.4.1.5 Calculation Results Bright blue content of the mass fraction w_1 , according to equation (A.1) Calculated.

$V \times c \times M$

$m \times 1000 \times 2 \times$

100% (A.1)

Where.

Volume V --- titrate the sample consumed titanium trichloride standard titration solution, in milliliters (mL);

C --- concentration of titanium trichloride standard titration solution, expressed in moles per liter (mol/L);

--- The M molar mass of brilliant blue, in units of grams per mole (g/mol) [M ($C_{37}H_{34}N_2Na_2O_9S_3$) = 792.85];

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

1000 --- volume conversion factor;

2 --- molar conversion coefficient.

The results parallel arithmetic mean of the measurement results shall prevail (reserved a decimal). In two independent test repeated conditions Given absolute difference is not more than the arithmetic mean of 1.0%.

A.4.2 Colorimetric method A.4.2.1 Method summary After dissolving each sample with a known water content in bright blue reference, at the maximum absorption wavelength, were