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

GB 14888.1-2010

Replacing GB 14888.1-1994

National food safety standards -- Food additives -- New red

食品添加剂 新红

(English Translation)

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Foreword

This standard replaces GB 14888.1-1994 "new food additive red." this standard compared with GB 14888.1-1994, the main changes are as follows.

- Added safety tips;
- New Red content $\geq 80\%$ by the index revised to $\geq 85\%$;
- Modify the discrimination test methods;
- Colorimetric method replicates allowable difference from 2% revised to 1.0%;
- An increase of chloride and sulfate indicators and detection methods, combined with the loss on drying, indicators $\leq 15.0\%$;
- Cancel the quality specifications of isopropyl ether extract;
- Increase the sum of the unreacted intermediate indicators and detection methods;
- Added unsulfonated primary aromatic amine (aniline meter) indicators and detection methods;
- Arsenic (As) is modified by chemical detection methods limit law atomic absorption spectrometry;
- Cancel the heavy metals (Pb) quality specifications;
- Increase the lead (Pb) indicator and detection methods.

The Standard Appendix A, Appendix B and Appendix C are normative appendices, Appendix D is an informative annex.

This standard replaces the standards previously issued as follows.

--GB 14888.1-1994.

National Food Safety Standard Red new food additive

1 Scope

This standard applies to the sulfanilic acid by diazotization with 5-acetamido-4-naphthol-2,7-disulfonate coupling, salting and refining from the new food additive red.

2 Normative references

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

3.1 Chemical Name

7 - [(4-phenyl sulfonic acid group) azo] -1-acetylamino-8-naphthol-3,6-disulfonic acid trisodium salt

3.2 Formula

N a O 3 SNN

OHNHCOCH 3

SO 3 N aN a O 3 S

Formula 3.3

C18H12O11N3Na3S3

3.4 Relative molecular mass

611.47 (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 Reddish-brown color by visual assessment of natural light.

State organization powders or granules

4.2

Physical indicators. to comply with Table 2.

Table 2. Physical and chemical indicators

Item Index Test Method the new red, w /% $\geq$ 85.0 Appendix A A.4 Loss on drying, chloride (based on NaCl) and sulfate (NaSO_4 in dollars) of the total, w /% $\leq$ 15.0 Appendix A A.5 Water-insoluble, w /% $\leq$ 0.20 A.6 in Appendix A Deputy dye, w /% $\leq$ 2.0 Appendix A A.7 Unreacted intermediate sum, w /% $\leq$ 0.50 Appendix A A.8 Unsulfonated primary aromatic amine (aniline dollars), w /% $\leq$ 0.01 A.9 in Appendix A Arsenic (As)/(mg/kg) $\leq$ 1.0 Appendix A A.10 Lead (Pb)/(mg/kg) $\leq$ 10.0 Appendix A A.11 Appendix A (Normative) Testing method A.1 Safety Tips Reagents The standard test methods used for toxic or corrosive, according to the relevant provisions of the operation, the operation need to be careful. If splash on the skin should immediately wash with water, severe cases should be treated immediately. When using a volatile acid, to be carried out in a fume hood.

A.2 General Provisions this standard reagents and water, did not indicate when the other requirements, refer to the three water analytical reagent and GB/T 6682-2008 requirements.

Standard test solution required impurity standard solution, preparations and products at the time did not indicate other provisions, according to GB/T 601, GB/T 602, GB/T 603 regulations formulated and calibration.

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

A.3.1.2 ammonium acetate solution. 1.5g/L.

A.3.2 Instruments and Equipment A.3.2.1 Spectrophotometer.

A.3.2.2 cuvette. 10mm.

A.3.3 Identification method it should meet the following conditions.

A.3.3.1 Weigh about 0.1g sample (accurate to 0.001g), was dissolved in 100mL of water, red clear solution.

A.3.3.2 Weigh about 0.2g sample (accurate to 0.001g), was dissolved in 20mL sulfuric acid was dark purple, take this solution 2 drops to 3 drops, 5 mL of water, shake, red.

A.3.3.3 Weigh about 0.1g sample (accurate to 0.001g), was dissolved in 100mL ammonium acetate solution of this solution 1mL, plus ammonium acetate solution Equipped to 100mL, the maximum absorption wavelength of the solution was $525 \text{ nm} \pm 2 \text{ nm}$.

A.4 Determination new red A.4.1 Titanium trichloride titration (Arbitration Act) A.4.1.1

Method summary in acidic medium, the new red azo group is titanium trichloride reduced and decomposed into amino compounds by elimination of titanium trichloride standard titration solution Consumption, calculate the content.

A.4.1.2 Reagents and materials A.4.1.2.1 trisodium citrate.

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 cylinders loaded carbon dioxide.

A.4.1.3 instruments and equipment A-- conical flask (a 500 mL);

B-- Brown burette (50mL);

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

D-- containing 100g/L solution of ammonium carbonate and 100g/L ferrous sulfate solution container of an equivalent mixture (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 0.5g sample (accurate to 0.0001g), in 500mL conical flask, 15g trisodium citrate and 200mL boiled water, After shaking dissolved, according to Figure A.1 installed equipment at surface through carbon dioxide while heating boil, with titanium trichloride standard titration solution Titration end point so that the inherent color disappeared.

A.4.1.5 Calculation Results New red mass fraction $1w$ its value is expressed in%, according to formula (A.1) Calculated.

$0) 4 /) (1000/($

$MV_{cw} (A.1)$

Where.

c - accurate titanium trichloride standard titration solution concentration value in units of moles per liter (mol/L);

V - accurate value of the sample consumed titration of titanium trichloride standard titration solution volume in milliliters (mL);

M - molar mass of new red value, in units of grams per mole (g/mol) [$M(\text{C}_{18}\text{H}_{12}\text{O}_{11}\text{N}_3\text{Na}_3\text{S}_3) = 611.47$];

m_1 - mass value of the sample in grams (g).

The results represent a decimal.

The absolute difference between the parallel determination results is not more than 1.0%