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

GB 6227-1986

Replacing GB 6227.1-1999

**The national food safety standards of food additives Sunset
Yellow
(English Translation)**

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3.1 Chemical Name

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Foreword

This standard replaces GB 6227.1-1999 "sunset yellow food additive." this standard compared with GB 6227.1-1999, the main changes are as follows.

- Added safety tips;
- Canceled $\geq 60.0\%$ quality specifications, will modify the index $\geq 85.0\%$ $\geq 87.0\%$;
- Modify the discrimination test methods;
- Colorimetric method allows parallel determination by the difference of 2.0% revised to 1.0%;
- Loss on drying, chloride and sulfate aggregates by the $\leq 15.0\%$ revised to $\leq 13.0\%$, and revised the detection method;
- Added amino benzene sulfonate, 2-naphthol-6, sodium 6,6'-oxybis (2-naphthalene sulfonic acid) disodium 4,4' - (diazonium imino YI) two acid disodium salt intermediates and 1-phenylazo-2-naphthol indicators and detection methods unreacted;
- 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;
- An increase of mercury (Hg) indicators 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 6227.1-1986, GB 6227.1-1999.

National Food Safety Standard Sunset Yellow Food Additives

1 Scope

This standard applies to the after-amino acid diazotization and coupling Xue Fr salt prepared food additive sunset yellow.

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

6-hydroxy-5 - [(4-phenyl sulfonic acid group) azo] -2-naphthalenesulfonic acid disodium salt

3.2 Structure.

Formula 3.3

C₁₆H₁₀N₂Na₂O₇S₂

3.4 Relative molecular mass

452.37 (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 by visual assessment of the orange-red color under 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 Sunset yellow, w /% ≥ 87.0 Appendix A A.4 Loss on drying, chloride (based on NaCl) and sulfate (NaSO_4 in dollars) of the total, w /% ≤ 13.0 Appendix A A.5 Water-insoluble, w /% ≤ 0.20 A.6 in Appendix A Amino benzene sulfonate, w /% ≤ 0.20 Appendix A A.7-6- Sodium 2-naphthol, w /% 0.30 Appendix A A.8 6,6'-oxybis (2-naphthalene sulfonic acid) disodium, w /% ≤ 1.0 A.9 in Appendix A 4,4' - (diazo imino) two acid disodium salt, w /% ≤ 0.10 A.10 Appendix A 1-phenyl-azo-2-naphthol/(mg/kg) ≤ 10.0 A.11 Appendix A Unsulfonated primary aromatic amine (aniline meter) /% ≤ 0.01 Appendix A A.12 Deputy dye, w /% ≤ 4.0 Appendix A A.13 Arsenic (AS)/(mg/kg) ≤ 1.0 Appendix A A.14 Lead (PA)/(mg/kg) ≤ 10.0 A.15 Appendix A Mercury (Hg)/(mg/kg) ≤ 1.0 A.16 Appendix A 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 0.01g), was dissolved in 100mL of water, which was a clear orange solution.

A.3.3.2 Weigh about 0.1g sample (accurate to 0.01g), after adding 10mL sulfuric acid was orange-red, take this solution 2 drops to 3 drops added 5mL the water was orange.

A.3.3.3 Weigh about 0.1g sample (accurate to 0.01g), was dissolved in 100mL ammonium acetate solution of this solution 1mL, plus acetic acid with an ammonium solution to 100mL, wavelength of maximum absorption of the solution was $482 \text{ nm} \pm 2 \text{ nm}$.

A.4 Determination of sunset yellow A.4.1 Titanium trichloride titration (Arbitration Act)

A.4.1.1 Method summary in acidic medium, sunset yellow azo group is reductive decomposition of titanium trichloride, titanium trichloride consumption according to standard titration solution, calculated 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 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), placed in 500mL Erlenmeyer flask was dissolved in 50mL boiling water and cooled to room temperature, After adding 15g of sodium hydrogen tartrate and 150mL boiling water, dissolved by shaking, according to Figure A.1 instrument installed at the level of carbon dioxide introduced into the same time, Boiled, with titanium trichloride standard titration solution titration end point so that the inherent color disappeared.

A.4.1.5 Calculation Results Sunset yellow 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 sunset yellow values in grams per mole (g/mol) [$M(\text{C}_{16}\text{H}_{10}\text{N}_2\text{Na}_2\text{O}_7\text{S}_2) = 452.37$];

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

The results represent a decimal.