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NATIONAL STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

GB 1886.252-2016

National food safety standard

Food Additives - Iron oxide red

食品安全国家标准

食品添加剂 氧化铁红

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National Food Safety Standard

Food Additives - Iron oxide red

1 Scope

This standard applies to the food additives iron oxide red as obtained with the ferrous iron as raw material through the two-step oxidation method and precipitation.

2 Chemical name, molecular formula and relative molecular mass

2.1 Chemical name

Ferric oxide

2.2 Molecular formula

Fe_2O_3

2.3 Relative molecular mass

159.70 (in accordance with the 2011 International Relative Atomic Mass)

3 Technical requirements

3.1 Sensory requirements

Sensory requirements shall comply with the requirements of Table 1.

Table 1 -- Sensory requirements

Item	Requirements	Inspection methods
Color	Red	TAKE appropriate amount of sample and PLACE it uniformly in a white enamel dish; OBSERVE its color and state under natural light.
State	Powder	

3.2 Physiochemical indicators

Physiochemical indicators shall comply with the provisions of Table 2.

Appendix A

Testing method

A.1 General provisions

Unless otherwise specified in this standard, all the reagents used are of analytical pure; the standard titration solution, the standard solution for impurity determination, preparations and products used shall be prepared in accordance with the provisions of GB/T 601, GB/T 602, and GB/T 603; AND the test water shall comply with the requirements for level III water as specified in GB/T 6682. AND the solutions used in the test refer to, unless otherwise indicated of its solvent, the water solution.

A.2 Identification test

A.2.1 Reagent and solution

A.2.1.1 Hydrochloric acid solution: 1 + 9.

A.2.1.2 Ammonium thiocyanate solution: WEIGH 8 g of ammonium thiocyanate, accurate to 0.01 g; ADD water to dissolve it and MAKE its volume reach to 100 mL.

A.2.2 Identification method

WEIGH 0.1 g of sample, accurate to 0.01 g; ADD 5 mL of hydrochloric acid solution; MAKE it boiling; COOL it down; ADD ammonium thiocyanate solution; AND it shall in blood red.

A.3 Determination of iron oxide red content (in terms of Fe)

A.3.1 Reagents and materials

A.3.1.1 30% Hydrogen peroxide.

A.3.1.2 Potassium iodide.

A.3.1.3 Hydrochloric acid solution: 9 + 20.

A.3.1.4 Starch indicator solution: TAKE 0.5 g of soluble starch; ADD 5 mL of water; STIR it uniformly; slowly POUR it into 100 mL of boiling water; STIR it while adding it; CONTINUE boiling it for 2 min; LET it cool down; TAKE the

A.5.2 Instruments and equipment

Atomic absorption spectrometer.

A.5.3 Analytical procedures

WEIGH about 2 g of the sample, accurate to 0.01 g; PLACE it into a 100 mL beaker; ADD 15 mL of hydrochloric acid solution; HEAT it on the hot plate to completely dissolve it; COOL it down, ADD 2 mL of hydrogen peroxide; CONTINUE heating to slightly boil it; MAINTAIN for 3 min; after cooling it down, ADD 25 mL of 4-methyl-2-pentanone and 10 mL of hydrochloric acid solution; TRANSFER the solution into a 125 mL separating funnel; SHAKE it for 2 min; LET it stand for 30 s; TRANSFER the lower layer water phase into the beaker; HEAT to make the solution concentrate to about 5 mL ~ 10 mL; FILTER the residual solution; USE water to wash the filtration residue; COMBINE it with filtrate; MAKE the volume reach to 100 mL; PREPARE for use. USE the same method to prepare blank solution.

PREPARE the lead standard solution in accordance A.5.1.4, and FOLLOW the flame atomic absorption spectrometry in accordance with GB 5009.12 to make determination.

The results of the test are based on the arithmetic mean of the parallel measurement results. The absolute difference between the two independent determinations obtained under repeatability shall be not greater than 1.0 mg/kg.

A.6 Determination of mercury (Hg)

A.6.1 Reagents and materials

A.6.1.1 Sodium hydroxide solution: 1 g/L

A.6.1.2 Sodium borohydride solution: 8 g/L (solvent is 1 g/L sodium hydroxide solution).

A.6.1.3 Mercury standard solution: it is prepared and calibrated in accordance with GB/T 602, diluted in accordance with the requirements of the instruments used to prepare it into the standard solutions of mercury concentration in 0.001 µg/mL, 0.002 µg/mL, and 0.003 µg/mL, respectively.

A.6.2 Instruments and equipment

Atomic absorption spectrometer.

A.6.3 Atomic absorption spectrometer reference conditions

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Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

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