USDA United States Department of Agriculture
Foreign Agricultural Service

GAIN Global Agricultural Information Network

Voluntary Report – Voluntary - Public Distribution **Date:** November 16, 2022

Report Number: CH2022-0123

Report Name: 2017 Morpholine National Food Standard

Country: China - People's Republic of

Post: Beijing

Report Category: Citrus, FAIRS Subject Report, Fresh Deciduous Fruit, Sanitary/Phytosanitary/Food Safety

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Report Highlights:

On September 29, China notified the draft National Food Safety Standard on Food Additive Morpholine Fatty Acid Salt Fruit Wax to the WTO SPS Committee as G/SPS/N/CHN/1251, which intends to replace the existing National Food Safety Standard of the same title issued on August 31, 2016 (GB1886.227-2016). This report contains an unofficial translation of the existing national food safety standard on food additive Morpholine Fatty Salt Fruit Wax (GB1886.227-2016) which entered into force on January 1, 2017.

Summary

On September 29, China notified the draft National Food Safety Standard on Food Additive Morpholine Fatty Acid Salt Fruit Wax to the WTO SPS Committee as G/SPS/N/CHN/1251, which intends to replace the existing National Food Safety Standard of the same title issued on August 31, 2016 (GB1886.227-2016). Compared with GB1886.227-2016, the notified draft standard has made modifications to the scope of the standard, requirements for solids and viscosity indexes, and the testing method. The comment period for China's WTO notification G/SPS/N/CHN/1251 ends on November 28, 2022.

The following is a translation of the existing national food safety standard on food additive Morpholine Fatty Salt Fruit Wax (GB1886.227-2016), which provides information on the sensory as well as physical and chemical requirements. A testing method is also attached to the standard.

BEGIN TRANSLATION

National Standard
of the People's Republic of China

GB 1886.227-2016

National food safety standard
Food additive -- Morpholine fatty acid salt fruit wax

Issued on August-31-2016 Implemented on January-01-2017

Published by the National Health and Family Planning Commission of the People's Republic of China

Foreword

This standard replaces GB 12489-2010 National Food Safety Standard on Food Additive: Morpholine Fatty Acid Salt Fruit Wax.

Compared with GB 12489-2010, the main changes in this standard are as follows:

-Modified the scope of the standard.

-The burning residue index is revised from ≤ 0.3% to ≤ 0.5%.

-The viscosity index is changed from ≤ 0.018 Pa • s to ≤ 0.020 Pa • s

1.Scope

This standard is applicable to the food additive morpholine fatty acid salt fruit wax prepared by reaction of morpholine, fatty acid and natural animal and vegetable wax (such as palm wax) or natural animal and vegetable gum (such as lac) at a certain temperature.

2 Technical Requirements

2.1 Sensory Requirements

Sensory indices should comply with provisions in the Table 1.

Table 1 Sensory Requirements

Item	Requirements	Test Methods
Color	Yellow brown, brown	Take an appropriate amount of sample, place it in a clean and dry colorimetric tube, and observe its color and state visually under natural light
State	Transparent or translucent lotion	

2.2 Physical and Chemical Indices

Physical and chemical indices shall comply with provisions in Table 2.

Table 2 Physical and Chemical Indexes

Item		Index	Testing Methods
Solids, ω/%		12~20	A.4 in Appendix A
Viscosity/(Pa • s)	≤	0.020	A.5 in Appendix A
Burning residue, ω/%	≤	0.5	A.6 in Appendix A
Total arsenic (measured as As)/(mg/kg)	≤	1.0	A.7 in Appendix A
Lead (Pb)/(mg/kg)	≤	2.0	A.8 in Appendix A
Cold stability test		Should pass the test	A.9 in Appendix A

Annex A

Testing method

A. 1 Warning

Some of the test procedures specified in the test method may lead to hazardous situations. The operator shall take appropriate safety and protective measures.

A. 2 General provisions

Reagents and water used in this standard, unless other requirements are specified, refer to analytical pure reagents and Grade III water specified in GB/T 6682. The standard titration solution, standard solution for impurity determination, preparations and products used in the test shall be prepared according to GB/T 601, GB/T 602 and GB/T 603 if no other requirements are indicated; The solution used refers to the aqueous solution if the solvent used for preparation is not specified.

A. 3 Identification test

A. 3.1 Method summary

According to the fact that morpholine is alkaline, animal and vegetable waxes are dissolved in carbon tetrachloride, and animal and vegetable gums react with ammonium molybdate in sulfuric acid medium to form green complexes.

A. 3.2 Reagents and materials

A. 3.2.1 Carbon tetrachloride

A. 3.2.2 Ammonium molybdate

A. 3.2.3 Sulphuric acid

A. 3.2.4 Hydrochloric acid solution: 1+1

A.3.2.5 Sodium hydroxide solution: 200 g/L

A.3.2.6 Phenolphthalein indicator solution: 10g/L

A. 3.3 Identification steps

A. 3.3.1 Identification method of animal and vegetable wax as film-forming agent

A. 3.3.1.1 Weigh about 10g of sample to the nearest 0.1 g, add 20 mL of hydrochloric acid solution, and heat it on a water bath for 10 minutes. Cool it to room temperature and separate solid A. Add sodium

hydroxide solution into the residual solution to make it alkaline and then distill it. Collect the fraction at 102 °C~104 °C and add 1 drop of phenolphthalein indicator solution, and it should show the color pink.

A. 3.3.1.2 Weigh about 1g solid A in A.3.3.1.1 into a beaker, add 5 mL carbon tetrachloride, heat it on a water bath to dissolve solid A.

A. 3.3.2 Identification method of animal and vegetable glue as film forming agent

A. 3.3.2.1 Operate as in A.3.3.1.1

A. 3.3.2.2 Weigh about 1g solid A in A.3.3.2.1 into the beaker, add a few drops of solution of 1g ammonium molybdate and 3mL sulfuric acid, and it should be dark green.

A.4 Determination of solids

A. 4.1 Analysis steps

Take 2g of sample, accurate to 0.0002g, and place it in a 50mL porcelain crucible with constant weight; place it in an electric heating drying oven, and dry it at 95°C ± 2°C until the mass is constant. Retain solid B for the determination of burning residue.

A. 4.2 Result calculation

The mass fraction of solid Bi is calculated according to Formula (A.1):

$$w_1 = \frac{m_2}{m_1} \times 100\% \qquad \text{.....(A.1)}$$

Where:

m_2 - mass of solid B, in gram (g);

m_1 - mass of the sample, in gram (g)

The arithmetic mean of the parallel determination results is taken as the measurement result, and the absolute difference between the two parallel determination results shall be no more than 0.8%.

A. 5 Determination of viscosity

A. 5.1 Instruments and equipment

Rotary viscometer: applicable range: 0.001 Pa • s~10 Pa • s

A.5.2 Analysis steps

Place about 400mL sample in a beaker with a diameter of no less than 70mm, and select the smallest rotor for measuring low viscosity. Adjust the rotational speed of the viscometer to 60 r/min. Start the motor of the viscometer, and read according to the operating instructions of the instrument after 20s~30s. Take the average of the three readings as the measurement result. The temperature of the measured sample is 20℃± 0.2℃

A. 6 Determination of burning residue

A.6.1 Analysis steps

Take solid B in A.4.1, add 1 drop of sulfuric acid, and slowly heat until it is completely carbonized. Cool to room temperature, add 1mL sulfuric acid to moisten the sample, and slowly heat until the sulfuric acid vapor escapes. Transfer to high temperature furnace and burn at 500℃~600℃ until the mass is constant.

A. 6.2 Result calculation

The mass fraction of burning residue B2 is calculated according to Formula (A.2):

$$w_2 = \frac{m_3}{m_1} \times 100\% \qquad \text{……(A.2)}$$

Where:

m_3 - mass of the burning residue, in gram (g);

m_1 - mass of the sample, in gram (g).

The arithmetic mean of the parallel determination results is taken as the measurement result, and the absolute difference between the two parallel determination results shall be not more than 0.03%.

A.7 Determination of total arsenic (measured as As)

A.7.1 Sample treatment

A.7.1.1 Weigh 3g sample, accurate to 0.0002g, and place it in a 50 mL conical flask. Add glass beads to prevent bumping. Heat it on a hot plate until the volatile substances have volatilized. Add 10mL mixed nitric acid and perchloric acid solution (4+1), cover it with a watch glass, and place it overnight. Digest it on the hot plate the next day until it is colorless, transparent, and emits white smoke. When the digestion solution blackens, add 5mL mixed solution of nitric acid and perchloric acid (4+1), and digest it to 1mL~2mL.

A.7.1.2 Cool down, transfer the contents into a 50mL volumetric flask with water, and add 10mL mixed solution of 50g/L thiourea and 50g/L ascorbic acid (1:1); dilute to the scale with hydrochloric acid solution (1+19), and shake up for measurement.

A.7.1.3 Without sample, other operations are the same as A.7.1.1 and A.7.1.2 as blank.

A. 7.2 Determination

It shall be conducted according to GB 5009.11 hydride generation atomic fluorescence spectrometry.

A.8 Determination of lead (Pb)

A.8.1 Sample treatment

A.8.1.1 Operate as A.7.1.1

A.8.1.2 Cool down, transfer the contents into a 50mL volumetric flask with water, dilute to the scale, and shake up for testing.

A.8.1.3 Without sample, other operations are the same as A.8.1.1 and A.8.1.2 as blank.

A.8.2 Others

It shall be conducted according to GB 5009.75 Graphite furnace atomic absorption spectrometry.

A. 9 Cold stability test

Take two 50mL Nessler colorimetric tubes and load the samples to the scale. Put one into a low temperature bath, keep it at - 2°C ± 0.2°C for 4h, and then take it out to recover to room temperature. The other one shall be stored at room temperature.

Visually check the transparency of the test solution in the two colorimetric tubes, which shall have no notable difference.

END TRANSLATION

Attachments:

No Attachments.