GB

NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB 5009.260-2016

National Food Safety Standard - Determination of sodium copper chlorophyll in foodstuffs

食品安全国家标准

食品中叶绿素铜钠的测定

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National Food Safety Standard - Determination of sodium copper chlorophyll in foodstuffs

1 Scope

This Standard specifies the determination methods for sodium copper chlorophyll in fruit and vegetable juice (pulp) drinks, carbonated drinks, flavored drinks, blended wine, candies, canned food.

This Standard is applicable to the determination of sodium copper chlorophyll in fruit and vegetable juice (pulp) drinks, carbonated drinks, flavored drinks, blended wine, candies, canned food.

2 Principle

Sodium copper chlorophyll in the specimen, under acidic conditions, is absorbed by polyamide powder, is eluted by desorption solution, is determined by spectrophotometer, is quantified by the standard curve method.

3 Reagents and materials

Unless otherwise stated, the reagents used in this method are of analytically pure; the water is grade three water specified in GB/T 6682.

3.1 Reagents and materials

3.1.1 Sodium hydroxide.

3.1.2 Ammonium acetate.

3.1.3 Methanol.

3.1.4 Glacial acetic acid.

3.1.5 Polyamide powder: particle size of 0.150mm ~ 0.180mm.

3.2 Reagent preparation

3.2.1 Sodium hydroxide solution (4 mol/L): weigh 16.0 g of sodium hydroxide, use water to dissolve and set volume to 100 mL.

3.2.2 Sodium hydroxide solution (0.1 mol/L): weigh 0.40 g of sodium hydroxide,

4.6 Small sample mincer.

4.7 Porcelain mortar.

5 Analysis steps

5.1 Specimen preparation

5.1.1 Pretreatment of determination specimen of sodium copper chlorophyll

5.1.1.1 Pretreatment of beverage, alcohol samples

Well shake the sample. Accurately weigh 5mL ~ 10mL (to the nearest of 0.1 mL) of sample to a 100mL beaker. Heat in 55°C ~ 60°C water bath for 3min ~ 5min. Remove alcohol.

5.1.1.2 Pretreatment of canned food sample

Place a representative sample in the mincer to fully mash. Accurately weigh 1g ~ 10g of (to the nearest of 0.001g) well-mixed slurry to a 100mL beaker.

5.1.1.3 Pretreatment of candy sample

Place the sample in the porcelain mortar to finely grinded and well mixed. Accurately weigh 1g ~ 10g of (to the nearest of 0.001g) sample into a 100mL beaker.

5.1.2 Post-treatment of testing sample solution

Add 30mL of 0.2 mol/L ammonium acetate solution into a 100mL beaker that contains testing sample powder or sample slurry. Dissolve and well mix the sample solution. Use 4 mol/L sodium hydroxide solution and glacial acetic acid to adjust pH 5 ~ 6. Add into 3.0 g of polyamide powder. Completely stir 2min. Use about 20mL of 60°C ± 2°C distilled water to transfer the sample solution to G3 sand core funnel for suction-filtration. Discard the filtrate. Then use 75mL of desorption solution to desorb the pigment in 3 times. Perform suction-filtration. And use 20 mL of desorption solution to wash the residual liquid clean in the filter bottle. Collect the filtrate. Use desorption solution to set volume to 100 mL.

5.2 Apparatus conditions

5.2.1 Measuring wavelength: 405nm.

5.2.2 Cuvette: 1cm.

5.3 Production of standard curve