



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

GB 2726-2016

**Hygienic standard for cooked meat products
(English Translation)**

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Foreword

This Standard replaces SN/T 2894-2011 Food contact materials for export.

Polymers. Determination of methyl methacrylate in food simulant chromatography-mass spectrometry.

Compared with SN/T 2894-2011, the main changes in this Standard are as follows.

- modified the standard's name to "National Food Safety Standard - Food Contact Materials and Articles - Determination of Migration of Methyl Methacrylate";
- modified the preparation of food simulate test solution;
- modified the expression of analysis results;
- modified the detection limit and quantitation limit.

National Food Safety Standard - Food Contact
Materials and Articles - Determination of Migration of
Methyl Methacrylate

1 Scope

This Standard specifies the determination of gas chromatography - mass spectrometry of migration of methyl methacrylate in food contact materials and articles.

This Standard is applicable to the determination of migration of methyl methacrylate in food contact materials and articles.

2 Principle

Methyl methacrylate in water, acid, alcohol simulants are extracted with ethyl acetate. After the sunflower oil mimetic is extracted by anhydrous ethanol, the extract shall be detected by gas chromatography-mass spectrometry. Use external standard method to quantify.

3 Reagents and materials

Unless otherwise stated, the reagents used in this method are of analytical grade and water is of grade one specified in GB/T 6682.

3.1.5 Water-based, acidic, alcohol food simulant. the reagents used are in accordance with the provisions of GB 31604.1.

5.1 Sample migration test

In accordance with the requirements of GB 5009.156 and GB 31604.1, the sample shall be subjected to a migration test to obtain a food simulant test solution. If the food simulant test solution cannot be immediately used for the further test, the food simulant test solution shall be preserved at 0°C ~ 4°C refrigerator in the dark.

It shall cool or recover the obtained food simulant test solution to room temperature before the further test is carried out.

5.2.1 Preparation of water-based, acidic, alcohol simulant test solutions

Pipet 2.0 mL of the water-based, acidic, alcohol simulants obtained from the migration test in 10 mL plugged centrifuge tube. Respectively add 0.5 g of sodium chloride and 2 mL of ethyl acetate into the centrifuge tube. After vortex extraction (1500 r/min) for 1.5 min, put it aside for 2 min. Remove the supernatant. Use anhydrous sodium sulfate to dry. Filter it through a 0.45 µm filter for gas chromatography-mass spectrometry.

5.2.2 Preparation of sunflower seed oil simulant test solution

Pipet 2 g (to the nearest 0.1 mg) of sunflower seed oil food simulant obtained from the migration test into the 10 mL plugged centrifuge tube. Add 2 mL of ethyl acetate into the centrifuge tube. After vortex extraction (1500 r/min) for 1 min, put it aside for 2 min. Centrifuge in the high-speed centrifugation (4000 r/min) for 5 min. Immediately remove the supernatant. Filter it through a 0.45 µm filter for gas chromatography-mass spectrometry.

5.3 Preparation of blank test solution

Process the food simulant not contact with food contact material according to the steps of 5.2.1 and 5.2.2.

The blank solution and food simulant test solution shall be sequentially injected. The blank area is deducted so as to obtain the peak area of methyl methacrylate.

6 Expression of analysis results

Obtain the concentration of methyl methacrylate in the sample solution from the standard curve. Calculate the amount of migration according to GB

5009.156 Obtain the amount of methyl methacrylate in the food simulant and products. The result is retained to two digits after the decimal point.

7 Precision

The absolute difference between the two independent determinations obtained under repeatability shall not exceed 10% of the arithmetic mean.

8 Other

The detection limit of methyl methacrylate in water-based, acidic, and alcohol simulants is 0.2 mg/L. The detection limit of methyl methacrylate in sunflower seed oil simulant is 0.3 mg/kg.

The quantification limit of methyl methacrylate in water-based, acidic, and alcohol simulants is 0.5 mg/L. The quantification limit of methyl methacrylate in sunflower seed oil simulant is 0.7 mg/kg.

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