



GB 31604.1-2023

National Food Safety Standard General Rules for Migration Test of Food Contact Materials and Articles

食品安全国家标准 食品接触材料及制品
迁移试验通则

National Health Commission of the People's
Republic of China
State Administration for Market Regulation of
the People's Republic of China

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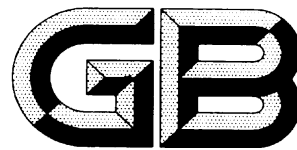
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Foreword

This standard replaces GB 31604.1-2015 "National Food Safety Standard General Rules for Migration Test of Food Contact Materials and Articles".

Compared with GB 31604.1-2015, the main changes of this standard are as follows:

- the scope has been revised;
- the terms and definitions have been revised;
- the basic requirements have been revised;
- the selection of food simulants has been revised;
- the selection of migration test conditions has been revised;
- the "Screening test and chemical solvent substitution test" has been revised to "Screening test" and "Chemical solvent substitution test";
- the "Result corrections" has been revised to "Correction of migration test result" and the content of area-volume ratio has been added;
- the "Selection of Migration Test Results" has been added;
- the Annex A has been revised.

National Food Safety Standard

General Rules for Migration Test of Food Contact Materials and Articles

1 Scope

This standard specifies the terms and definitions, basic requirements, selection of food simulants, selection of migration test conditions, screening tests, chemical solvent substitution tests, correction of migration test results, and selection of migration test results for migration test of various types of food contact materials and articles.

2 Terms and Definitions

2.1 Migration test

It refers to the test performed under given conditions for determination of migration amount from constituents of food contact materials and articles to the food or food simulant and other testing media being contacted, including specific migration test, overall migration test, and chemical solvent substitution test.

2.2 Food simulant

It refers to a test medium imitating food for migration test, which can factually reflect the migration from constituents of food contact materials and articles to food being contacted and has the typical common characteristics of certain type of food.

2.3 Screening test

It refers to the method to screen the specific (overall) migration using usage, overall migration, or residual content to verify the compliance of specific (overall) migration of a certain kind (category) of substance in food contact materials and articles.

2.4 Chemical solvent substitution test

It refers to the migration test conducted through the substitution of fatty food simulants with chemical solvents under specified conditions.

2.5 Reusable food contact materials and articles

It refers to the food contact materials and articles already or intended to be used for many times and be contacted with food repeatedly.

3 Basic Requirements

3.1 For the determination of overall migration of food contact materials and articles, food simulants shall be selected and migration test shall be conducted in accordance with the provisions of this standard.

3.2 For the determination of overall migration of food contact materials and articles, if materials and articles have already come into contact with food, the food in contact shall be directly tested, or materials and articles that have not come into contact with food shall be selected for migration test using food simulants; If materials and articles have not yet come into contact with food, food or food simulants shall be selected for migration test.

3.3 Food simulants and migration test conditions shall reflect the actual application situation as much as possible. When there are clear intended application conditions for food contact materials and articles, the most stringent test conditions shall be selected based on the intended application conditions (the conditions that result in the highest migration); When the most stringent test conditions cannot be determined, all conditions corresponding to the actual application conditions shall be selected for testing. When there are no clear intended application conditions for food contact materials and articles, the most stringent test conditions supported by scientific evidence shall be selected.

3.4 The migration test shall not result in changes in the physical properties or other changes (such as deformation, melting, *etc.*) of the test sample that will not occur under normal application conditions. If the above changes occur during the migration test, the migration test shall be conducted under the test conditions that are not lower than the actual contact conditions or using other food simulants with scientific evidence.

3.5 The final product (or sheet, test sample) shall be selected for migration test. For food contact materials that have remarkable difference with actual molded products (e.g. resins or granules, coatings, printing inks, and adhesives, *etc.*), the migration test shall be carried out with the final products (or sheets or test samples) made under actual processing conditions. The detailed requirements for final products (or sheets or test samples) shall comply with the provisions stipulated in GB 5009.156 and other relevant national food safety standards.

3.6 When conducting the migration test on multi-material food contact materials and articles, the migration test can be conducted on the entire final product or on each material separately.



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