



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

GB 4806.11-2023

**National food safety standard - Rubber materials and products
for food contact**

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Foreword

This standard replaces GB 4806.11-2016 National food safety standard - Food contact rubber materials and articles with respect to the relevant requirements for rubber materials and articles, as well as the Announcement No.14 [2013], Announcement No.14 [2014], Announcement No.5 [2016] and Announcement No.7 [2016] of the former National Health and Family Planning Commission of the People's Republic of China and the Announcement No.4 [2020] of the National Health Commission of the People's Republic of China with respect to the basic raw materials for rubber.

The following main changes have been made with respect to the above standard and announcements.

- The clause "Scope" has been modified;
- The clause "Terms and definitions" has been modified;
- The requirements for raw materials have been modified;
- The physical and chemical indexes have been modified;
- Other technical requirements have been added;
- The requirements for migration test have been modified;
- Annex A has been modified.

National food safety standard - Food contact rubber materials and articles

1 Scope

This standard is applicable to the food contact rubber materials and articles.

2 Terms and definitions

2.1

food contact rubber materials and articles

materials and articles mainly made of natural rubber, synthetic rubber or vulcanized thermoplastic elastomers, which have been or are intended to be in contact with food or food additives or whose components may be transferred to food under normal conditions of use

3 Basic requirements

The food contact rubber materials and articles shall meet the requirements of GB 4806.1.

4.2 Sensory requirements

The sensory requirements for food contact rubber materials and articles shall meet those specified in Table 1.

4.3.1 General physical and chemical indexes

The general physical and chemical indexes of food contact rubber materials and articles shall meet those specified in Table 2.

4.4 Other technical requirements

The food contact rubber materials and articles that use coatings, inks and/or adhesives shall also comply with the corresponding national food safety standards for coatings, inks and/or adhesives.

5.1.1 General requirements

The migration test shall be carried out in accordance with those specified in GB 31604.1 and GB 5009.156, unless there are special requirements in this standard.

5.1.2.1 Food simulants containing grease

Vegetable oils shall be selected as food simulants for foods containing grease according to GB 31604.1. If it is technically infeasible to use vegetable oil for migration test of materials or articles, or if changes in physical properties (deformation, melting and swelling) that will not occur under normal conditions of use have occurred, 50% ethanol solution (volume fraction) may be selected as food simulant. When 50% ethanol solution (volume fraction) is used as food simulant, the correction factor for food simulants containing grease and that for fat do not apply.

5.1.2.2 Overall migration test

The conditions of overall migration test for rubber materials and articles with food contact temperature (T) not exceeding 40 degrees C and contact time (t) not exceeding 24h shall be

selected in accordance with those specified in Table 3.

5.1.2.3 Number of potassium permanganate consumption tests

When reused food contact rubber materials and articles are subjected to the potassium permanganate consumption test, the same specimen shall be subjected to three migration tests, using a new food simulant each time, and the result of the third migration test shall be taken as the test result. If there is evidence that the migration in the first migration test does not exceed the migration limit and that in the second and third migration tests will not increase, the result of the first migration test shall be taken as the test result.

5.2.2 If the product contains natural latex, it shall have a label indicating "the product

contains natural latex" or similar terms.

Annex A

Allowable basic raw materials in food contact rubber materials and articles and their application requirements

A.1 Table A.1 specifies the allowable basic raw materials (such as natural rubber and synthetic rubber) in food contact rubber materials and articles and their application requirements. The basic raw materials listed in Table A.1 are based on their CAS No., and

for those without CAS No., their English names are used as references.

A.2 Substances with a relative molecular mass greater than 1,000 Da formed by polymerization or other means from the basic raw materials such as monomers, other starting materials and base polymers listed in Table A.1 are also allowed to be used as basic raw materials for food contact rubber materials and articles, and shall meet the restrictive requirements for the corresponding monomers, other starting materials and base polymers and other basic raw materials.

A.3 The total specific migration limit [SML(T)] and SML(T) grouping number in GB 9685 apply to this standard.

A.4 If monomers and other starting materials used in the synthesis of polymers in Table A.1 are acids, alcohols or phenols, their sodium, potassium and calcium salts (including acid salts and double salts) may also be used in the synthesis of corresponding polymers, and shall meet the restrictive requirements for corresponding acid, alcohol or phenolic monomers and other starting materials. Sodium, potassium and calcium salts (including acid salts and double salts) of monomers and other starting materials listed in Table A.1 shall be used according to the requirements of this standard.

Table A.1 -- Allowable basic raw materials in food contact rubber materials and articles and their application requirements

S.N. Name CAS No.

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