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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

GB 4806.10-2025

**National food safety standard -- Painting and coating for
food contact materials and products**

食品安全国家标准 食品接触材料及制品用涂料及涂层

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State Administration for Market Regulation.**

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Foreword

This Standard replaces GB 4806.10-2016 "National food safety standard - Food Contact Paints and Coatings" and Announcements No. 14 of 2014, No. 5 of 2016, No. 7 of 2016, No. 13 of 2016, and No. 9 of 2017 issued by the former National Health and Family Planning Commission; Announcements No. 3 of 2018, No. 9 of 2018, No. 11 of 2018, No. 15 of 2018, No. 2 of 2019, No. 4 of 2019, No. 6 of 2019, No. 4 of 2020, No. 6 of 2020, No. 9 of 2020, No. 2 of 2021, No. 6 of 2021, No. 9 of 2021, No. 1 of 2022, No. 2 of 2022, No. 5 of 2022, and No. 1 of 2023, Basic raw materials for painting and coating in Announcement No. 3 of 2023 issued by National Health Commission.

Compared with the aforementioned standards and announcements, the main technical changes in this Standard are as follows:

- The standard name has been modified;
- The scope has been modified;
- The terms and definitions have been modified;
- The basic requirements have been modified;
- The raw material requirements have been modified;
- The physicochemical properties have been modified;
- The migration test requirements have been modified;
- The labeling marks have been modified;
- Annex A has been modified.

National food safety standard -- Painting and coating for food contact materials and products

1 Scope

This Standard applies to painting and coating used in food contact materials and products.

2 Terms and definitions

2.1 Painting and coating for food contact materials and products

Intended for coating on food contact materials and articles, painting that comes into direct or indirect contact with food but whose components may transfer into the food, and the coating (film) formed therefrom.

3 Basic requirements

3.1 Painting and coating for food contact materials and products shall comply with the provisions of GB 4806.1.

3.2 Manufacturers of painting for food contact materials and products shall control the safety risks of their painting products through formula design, raw material selection, production process control, and product information dissemination.

3.3 Companies using painting for food contact materials and products shall control safety risks originating from painting through packaging design (such as seams and edges), adding effective barrier layers, controlling the curing process, and ensuring proper product information delivery. While achieving the desired effect, the amount of painting used and its residue shall be minimized as much as possible.

4 Technical requirements

4.1 Raw material requirements

4.1.1 The use of base raw materials in painting and coating for food contact materials and products shall comply with the provisions of Annex A and relevant announcements.

4.1.2 The use of additives in painting and coating for food contact materials and products shall comply with the provisions of GB 9685 and related announcements.

4.2 Sensory requirements for coating

5 Other

5.1 Migration test

5.1.1 Migration tests shall be conducted in accordance with the provisions of GB 31604.1 and GB 5009.156. Where there are special provisions in this Standard, those provisions shall prevail.

5.1.2 When conducting total migration tests on the surface coating of metal cans (including the can body, lid, pull ring, etc.) using 4% (volume fraction) acetic acid, if the test sample exhibits changes that would not occur under normal use conditions (such as coating peeling, blistering, metal corrosion, etc.), or if the immersion solution shows changes such as precipitation or turbidity, an inert substrate (such as stainless steel, glass, etc.) shall be selected to coat the corresponding coating to prepare a representative sample for re-conducting the total migration test. If the aforementioned changes still occur when using an inert substrate, or if preparing a representative sample is not feasible, 10% (volume fraction) ethanol can be used instead of 4% (volume fraction) acetic acid.

5.2 Labeling marks

Labeling marks shall comply with GB 4806.1.

Annex A

Allowable basic raw materials and usage requirements for painting and coating for food contact materials and products

A.1 Table A.1 specifies the list of permitted basic raw materials and usage requirements for painting and coating for food contact materials and products. The basic raw materials listed in Table A.1 are based on their CAS numbers; for those without CAS numbers, their Chinese names are used.

A.2 Substances with a relative molecular mass greater than 1000 Da, formed by polymerization or other means from basic raw materials such as monomers, other starting materials, and base polymers listed in Table A.1, are also permitted to be used as basic raw materials for food contact paintings and coatings. They shall comply with the restrictive requirements of the corresponding monomers, other starting materials, and base polymers.

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

A.4 For polymers listed in Table A.1 where the monomers and other starting materials used in the synthesis 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 the corresponding polymers, provided that they comply with the relevant restrictions on the acid, alcohol, or phenol monomers and other starting materials. The use of the sodium, potassium, and calcium salts (including acid salts and double salts) of the monomers and other starting materials listed in Table A.1 shall be in accordance with the provisions of this Standard.

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