



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

GB 9685-2016

Replacing GB 9685-2008

**National food safety standard - Standard for the use of
additives in food contact materials and articles**

食品安全国家标准 食品接触材料及制品用添加剂使用标准

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1 Scope

This standard lays down the principles for the use of additives in food contact materials and articles, the permitted kinds of additive, the scope of use, the maximum use level, the specific migration limit or maximum residual quantity, the total specific migration limit and other restrictive requirements.

This standard also covers certain monomers of base polymers, or other starting substances of the polymerisation reaction, used during the manufacture of food contact materials and articles.

2 Terms and definitions

2.1 Additive for food contact materials and articles. A substance added during the manufacture of food contact materials and articles to meet the intended use, which helps to improve their quality or properties or assists in improving them; the term also covers processing aids added during manufacture to ensure that production runs smoothly rather than to improve the quality or properties of the finished product. Referred to below as the additive.

2.2 Maximum use level. The maximum permitted quantity of a given additive or class of additive introduced when a food contact material or article is manufactured, expressed as a mass fraction in per cent.

2.3 Maximum residual quantity (QM). The maximum permitted quantity of a given additive or class of additive remaining in the food contact material or article, expressed as milligrams of the residual substance per kilogram of food contact material or article (mg/kg),

or as milligrams of the residual substance per square decimetre of the area of the material or article that contacts food (mg/dm²).

2.4 Specific migration limit (SML). The maximum permitted quantity of a given additive or class of additive migrating from the food contact material or article into the food or food simulant in contact with it, expressed as milligrams of the migrating substance per kilogram of food or food simulant (mg/kg), or as milligrams of the migrating substance per square decimetre of the area of the material or article in contact with the food or food simulant (mg/dm²).

2.5 Total specific migration limit, written SML(T). The maximum permitted total quantity of two or more additives migrating from the food contact material or article into the food or food simulant in contact with it, expressed as milligrams of the specified migrating substance or group per kilogram of food or food simulant (mg/kg), or as milligrams of the specified migrating substance or group per square decimetre of the area of the material or article in contact with the food or food simulant (mg/dm²).

2.6 CAS number (chemical abstract service). The Chemical Abstracts registry number.

2.7 Not detected (ND). The target substance analysed is not detected when the analysis is carried out by a method with a stated detection limit (DL).

2.8 FCA number. The Chinese code number of an additive for food contact materials and articles.

3 Principles for the use of additives in food contact materials and articles

3.1 When a food contact material or article is in contact with food under the recommended conditions of use, the level of the additive and of its impurities migrating into the food shall not harm human health.

3.2 When a food contact material or article is in contact with food under the recommended conditions of use, the additive migrating into the food shall not bring about a change in the composition, the structure or the colour, aroma and taste of the food, except where there is a special provision.

3.3 The additive used shall be kept to the lowest quantity in the food contact material or article that still achieves the intended effect.

3.4 The additive used shall meet the corresponding quality specification requirements.

3.5 Where a substance listed in GB 2760 is permitted for use as an additive for food contact materials and articles, it shall not exert a technical function in the food it contacts.

4 Provisions for the use of additives in food contact materials and articles

4.1 The use of additives in food contact materials and articles shall comply at the same time with Annex A, Annex B and Annex C.

4.2 The additives permitted in food contact materials and articles, and the requirements for their use, are given in Annex A.

4.3 The requirements for total specific migration limits are given in Annex B.

4.4 The special restrictions on metal elements are given in Annex C.

4.5 The meanings of the abbreviations for plastic materials are given in Annex D; Annex D is used to describe the abbreviations of the various classes of plastic material and applies only within this standard.

4.6 The index arranged by CAS number and by phonetic order is given in Annex E.

Annex A Additives permitted in food contact materials and articles and requirements for their use

A.1 This annex lays down in tabular form the additives permitted in each class of food contact material and article. In each table the additives are ordered by the characters, numerals, Latin letters and initial pinyin letters of their Chinese names, and all the provisions in every column of the table shall be met at the same time.

A.2 The column headed maximum use level gives the maximum use level at which the additive may be applied. In Table A.1, which covers plastic food contact materials and articles, the same column also lists the specific classes of plastic resin in which the additive may be used, given as resin abbreviations. The meanings of the abbreviations are in Annex D, and the resin classes include the resins covered by GB 4806.6 and other resins already approved.

A.3 The column headed SML/QM gives the specific migration limit or the maximum residual quantity of the additive. The column headed SML(T) lists the substances that have to meet a total specific migration limit together with the corresponding limit. The column headed SML(T) group number gives the SML(T) group number used in Table B.1. The sum of the migration of the additives concerned shall meet the total specific migration limit corresponding to that group number in Annex B. Where the maximum use level, the SML, the QM or the SML(T) is given without a limit, there is no particular restriction. Where both the SML and the SML(T) are given without a limit, the migration of the additive shall not exceed 60 mg/kg.

A.4 Where an additive listed in this annex contains one of the metal elements listed in Table

C.1, its use shall meet the special restriction on the specific migration limit of that metal element set out in Table C.1.

A.5 Because of the presence of isomers or of differences in the proportions of the components, some additives may have more than one CAS number. Where the same additive has several Chinese names, the CAS number governs; where there is no CAS number, the Chinese name governs.

A.6 Table A.1 covers the additives permitted in plastic food contact materials and articles, giving for each the FCA number, the Chinese name, the CAS number, the scope of use and maximum use level, the SML or QM, the SML(T), the SML(T) group number and the related restrictive requirements.

A.7 Table A.2 covers the additives permitted in food contact coatings and coating layers, with the FCA number, the Chinese name, the CAS number, the maximum use level, the SML or QM, the SML(T), the SML(T) group number and the related restrictive requirements.

A.8 Table A.3 covers the additives permitted in food contact rubber materials and articles, with the same set of columns.

A.9 Table A.4 covers the additives permitted in printing inks for food contact materials and articles, with the same set of columns.

A.10 Table A.5 covers the additives permitted in adhesives for food contact materials and articles, with the same set of columns.

A.11 Table A.6 covers the additives permitted in food contact paper and paperboard materials and articles, with the same set of columns.

A.12 Table A.7 covers the additives permitted in other food contact materials and articles, such as silicone rubber, giving the scope of use together with the FCA number, the Chinese name, the CAS number, the maximum use level, the SML or QM, the SML(T), the SML(T) group number and the related restrictive requirements.

A.13 Besides the additives listed in this annex, the following substances are also permitted as additives for food contact materials and articles: a) mixtures of the substances listed in Table A.1 to Table A.7, where no chemical reaction takes place and where the use of the mixture meets the relevant provisions for every additive in it; b) substances listed in Table A.2 of GB 2760, where they exert no technical function in the food itself and where their use meets the relevant requirements of this standard; c) the sodium, potassium and calcium salts, including acid salts and double salts, of the acids, alcohols and phenols listed in this annex, provided the restrictive requirements of the corresponding acid, alcohol or phenol additive are met; where a sodium, potassium or calcium salt is already listed in this standard, it shall be used according to the provisions of this standard; d) hydrated forms of the substances listed in this annex, provided their use meets the restrictive requirements of