

Explanation of new draft GB standards for food contact materials and articles

Recently, the National Health and Family Planning Commission of the People’s Republic of China (NHFPCC) released drafts of one standard modification and seventy food safety national standards including six new drafts of GB standards for food contact materials and articles of plastic, rubber, metal and paper, as well as food contact coatings for public consultation. Some existing related GB standards are proposed to be repealed. Here are highlights of the draft new GB standards:

General Requirements

1. Materials and articles shall comply with the provision in the GB standard on general safety requirements of food contact materials and articles.
2. Materials and articles shall have smooth surfaces, and shall be free of abnormal odour.
3. Solutions obtained from migration tests shall not display negative changes such as coloration, turbidity, precipitation, abnormal smell, etc.
4. Additives used shall comply with the provisions in GB 9685 “Hygienic standards for uses of additives in food containers and packaging materials.”

Plastic (including thermoplastic elastomers):



1. Resins used shall comply with the provisions in the GB standard for food contact plastic resins and the notices issued by NHFPCC.
2. Materials and articles shall meet the test requirements in the following table:

Test Item	Limit
Overall migration	≤ 10 mg/dm ² (≤ 60 mg/kg for plastic materials and articles in contact with food for infants and children)
Consumption of potassium permanganate	≤ 12 mg/kg
Migration of heavy metal (as lead)	≤ 1.2 mg/kg
Discoloration test (for colorant-added products)	Negative

3. Substances in materials and articles shall comply with the relevant specific migration limits (SML), maximum residual contents and total specific migration limits (SML(T))

Rubber (excluding silicone rubber and feeding teats):



1. Materials shall comply with the related requirements of raw materials in Annex A of the draft standard.
2. Materials and articles shall meet the test requirements in the following table:

Test Item	Limit
Overall migration	$\leq 10 \text{ mg/dm}^2$ ($\leq 60 \text{ mg/kg}$ for plastic materials and articles in contact with food for infants and children)
Consumption of potassium permanganate	$\leq 40 \text{ mg/kg}$
Migration of heavy metal (as lead)	$\leq 1 \text{ mg/kg}$
Migration of Zn	$\leq 20 \text{ mg/kg}$
Specific Migration of N-Nitrosamine	$\leq 0.01 \text{ mg/kg}$
Specific Migration of N-Nitrosamine substances	$\leq 0.1 \text{ mg/kg}$

Metal (including alloy and metal plating):



1. Metal base material:

- Lead, cadmium, arsenic, mercury, beryllium and lithium shall not be used as the alloying materials.
- Arsenic: $\leq 0.01\%$ by mass
- Sum of cadmium and lead: $\leq 0.01\%$ by mass

2. Metal plating:

- Cyanide, lead and cadmium compounds shall not be used as complexing agents, brighteners or other additives.
- Arsenic $\leq 0.01\%$ by mass
- Sum of cadmium, lead and mercury: $\leq 0.01\%$ by mass

3. Welding material:

- lead $\leq 0.1\%$ by mass
- arsenic $\leq 0.01\%$ by mass

4. Specific migration of impurity elements:

Element	Limit (SML)
Arsenic (As)	$\leq 0.002 \text{ mg/kg}$
Cadmium (Cd)	$\leq 0.002 \text{ mg/kg}$
Lead (Pb)	$\leq 0.01 \text{ mg/kg}$

5. Specific migration of alloy elements (elements to be tested are based on material composition):

Element	Limit (SML)
Aluminium (Al)	$\leq 10 \text{ mg/kg}$
Chromium (Cr)	$\leq 0.25 \text{ mg/kg}$
Nickel (Ni)	$\leq 0.14 \text{ mg/kg}$



Tin (Sn)	≤ 100 mg/kg (for tin-plated thin-sheet container, shall follow the limit in GB 2762 “Maximum levels of contaminants in foods” instead)
Antimony (Sb)	≤ 0.04 mg/kg
Zinc (Zn)	≤ 5 mg/kg

Paper, Paper Board, Paper Products:



1. Materials and articles shall meet the test requirements in the following table:

Test item	Limit	
Residue (for products in direct contact with food)	Lead (Pb)	≤ 3.0 mg/kg
	Arsenic (As)	≤ 1.0 mg/kg
	Formaldehyde	≤ 1.0 mg/dm ²
	Fluorescent material	Negative
Migration (for products in direct contact with liquid food, aqueous or oily food)	Overall migration	≤ 10 mg/dm ²
	Consumption of potassium permanganate	≤ 40 mg/kg
	Migration of heavy metal (as lead)	≤ 1 mg/kg
	Discoloration test	Negative

2. Articles not to be sterilized or washed before use shall meet the following microbiological requirements:

Test Item	Limit
Coliform (per 50 cm ²)	Not detected
Salmonella (per 50 cm ²)	Not detected
Mould	≤ 50 CFU/g

Coatings



Coating in contact with food shall meet the test requirements in the following table:



Test Item	Limit
Overall migration	≤ 10 mg/dm ² (≤ 60 mg/kg for coating in contact with food for infants and children)
Consumption of potassium permanganate	≤ 10 mg/kg
Migration of heavy metal (as lead)	≤ 1.0 mg/kg
Migration of formaldehyde *	≤ 0.1 mg/kg
Migration of phenol *	≤ 0.1 mg/kg
Migration of chromium (VI) *	≤ 0.01 mg/kg
Migration of fluorine *	≤ 0.2 mg/kg

* Applicable if that substance is used during production

Labelling

1. Label marking shall comply with the provisions in the GB standard on general safety requirements of food contact materials and articles.
2. Plastic resin types shall be marked on labels, instructions manuals and accompanying documents according to the appendix in the GB standard for food contact plastic resins. Major polymer components shall be marked for co-polymers.
3. If applicable, if this product contains natural rubber it shall be marked.
4. Metal base material shall be clearly marked with their material types and compositions of alloys, coatings and metal plating.
5. Metal food contact surface with metal plating or organic coating, material of plating or coating shall be marked. Metal composition of each layer of multiple metal plating shall be marked in the order from the outer layer to the inner layer, as well as separated by a “/”, for example, (chrome/nickel/copper).
6. Coating materials and articles shall respectively be marked with coatings and base materials.

HCT 解决方案：

Six new drafts of GB standards for food contact materials and articles are accompanied with editing statement including the basic situation of the standard drafting, the main amendments and reference of foreign regulations and standards.

HCT will continue to pay attention to the standard framework dynamic renewal. We suggest FCM related enterprises to pay great attention to the difference between the new and the old standards to avoid risk.

Contact Us

Web: <http://www.hct-test.com/>

Hotline: 400-0066-989

T: (86) 755 84616666

Email: service@hct-test.com

Add: 3rd floor, Block D, Peng Litai Industrial Estate, Long

Pingxi Road, Longgang District Shenzhen City.

Statement:

This publication is only educational and does not replace any legal requirements or applicable rules. Information included in the publication will not be revised. HCT does not guarantee that the content contained in the publication without any errors or will meet any particular performance or quality standards. If there is no consent of HCT in advance, please do not quote or refer any information