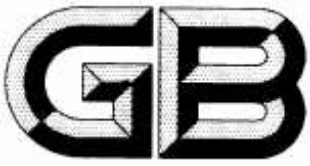

National Standard of the People's Republic of China

GB 10769—2010

National food safety standard Cereal-based complementary foods for infants and young children

Issued on: 2010 - 03 - 26 Implemented on: 2010 - 04 - 01

Issued by the Ministry of Health of People's Republic of China

Foreword

This standard corresponds to the Codex Stan 074 – 1981 （Revision 2006），Codex Standard for Processed Cereal-based Foods for Infants and Young Children issued by Codex Alimentarius Commission (CAC). The consistency level between this standard and Codex Stan 074 - 1981 is non-equivalent. This standard is also in reference to Chinese Dietary Reference Intakes compiled by Chinese Nutrition Society in 2000.

This standard replaces GB10767 -1997 General Technical Regulations for Infant Blended Milk Powder and Infant Completed Grain Flour, GB 10769 -1997 Formulated Weaning Foods for Infants and Young Children and GB 10770 -1997 Supplementary Weaning Foods for Infants and Young Children and their amendments.

Compared with GB10767 -1997, GB 10769 -1997 and GB 10770 -1997, the following main changes have been made to the Standard:

- Integrate the above three standards to one, titled as Cereal-based Complementary Foods for Infants and Young Children
- Provisions therein are modified.

The versions replaced by this standard are:

- GB 10767 - 1997;
- GB 10769 - 1989, GB 10769 - 1997;
- GB 10770 - 1989, GB 10770 - 1997.

National food safety standard
Cereal-based complementary foods for infants and young children

1 Scope

This Standard applies to cereal -based foods for infants and young children who are over 6 months old.

2 Normative References

The normative documents referenced in the text are indispensable to the application of this standard. For dated references, only the edition bearing such date applies to this standard. For undated references, the latest edition of the normative document referred to (including all the amendments) applies.

3 Terms and Definitions

3.1 Infants

Refer to persons of 0 - 12 month old.

3.2 Young children

Refer to persons of 12 - 36 month old.

3.3 Cereal-based complementary foods for infants and young children

Cereal-based complementary foods are prepared primarily from one or more milled cereals (for instance: wheat, rice, barley, oats, rye, corn, etc.), which should constitute at least 25% of the final mixture on a dry weight basis; they are with addition of sufficient amount of nutrient supplements or other adjuvants and suitable to be consumed by infants and young children who are over 6 month old.

4 Product categories

4.1 Cereal-based complementary foods for infants and young children

Cereal-based complementary foods for infants and young children which are or have to be prepared for consumption with milk or other appropriate nutritious liquids.

4.2 High -protein Cereal-based complementary foods for infants and young children

Cereal-based complementary foods for infants and young children with addition of high protein food which are or have to be prepared for consumption with water or other appropriate protein -free liquid.

4.3 Raw Cereal-based complementary foods for infants and young children

Cereal-based complementary foods for infants and young children which should be cooked until done.

4.4 Biscuits or other Cereal-based complementary foods for infants and young children

Cereal-based complementary foods for infants and young children which are to be used either directly or, after pulverization, with the addition of water, milk or other suitable liquids.

5 Technical Requirements

5.1 Requirements for raw materials

5.1.1 The raw materials should comply with related safety standards and or related regulations, ensure safety of infants and young children, satisfy nutrition needs and contain no materials which will jeopardize nutrition and health of infants and young children.

Hydrogenated oil and fat should not be used.

Raw materials treated by irradiation should not be used.

5.2 Sensory requirements: they should meet the specification in table 1.

Table 2 sensory requirements

Items	Requirements
color	conform to the identity of related product
flavor and smell	conform to the identity of related product
structure	conform to the identity of related product, no visible foreign matter
fast dissolvability	conform to the identity of related product

5.3 Essential components: Indices of essential components in the product should meet the specification in table 2.

Table 2 Essential components

Items	Cereal-based complementary foods for infants and young children	High -protein Cereal-based complementary foods for infants and young children	Raw Cereal-based complementary foods for infants and young children	Biscuits or other Cereal-based complementary foods for infants and young children[a]	Test method
Energy [b], kJ (kcal)/100g ≥	1250 (299)	1506 (360)	1250 (299)	1250 (299)	-
Proteins, g/100 kJ (kcal)	≥0.33 (1.4)	0.66 - 1.30 (2.8 - 5.4)	≥0.33 (1.4)	0.33 - 1.30 (1.4 - 5.4)	GB 5009.5
Fat, g/100 kJ (kcal) ≤	0.8 (3.3)	1.1 (4.6)	0.8 (3.3)	0.8 (3.3)	GB 5413.3
Of which [c]: linoleic acid, g/100 kJ Lauric acid, % total fat ≤ Tetradecanoic acid, % total fat ≤	-	0.07 - 0.29 15.0 15.0	-	-	GB 5413.27
Vitamin A, μgRE/100 kJ (kcal)	14 - 43 (59 - 180)			-	GB 5413.9
Vitamin D, μg/100 kJ (kcal)	0.25 - 0.75 (1.05 – 3.14)			-	
Vitamin B_1, μg/100 kJ (kcal) ≥	12.5 (52.3)			-	GB 5413.11
Calcium, mg/100 kJ (kcal) ≥	12.0 (50.2)	20.0 (83.7)	12.0 (50.2)	12.0 (50.2)	GB 5413.21
Iron, mg/100 kJ (kcal) ≥	0.25 – 0.50 (1.05 – 2.09)			-	
Zinc, mg/100 kJ (kcal)	0.17 - 0.46 (0.71 - 1.92)			-	

Sodium, mg/100 kJ (kcal) ≤	24.0 (100.4)	

[a] If vitamin A, vitamin D, iron and zinc are added into the biscuits or other Cereal-based complementary foods for infants and young children, the contents should meet the specifications for other components in table 2.

[b]The energy is calculated through multiplifying the contents of protein, fat and carbohydrate contained in 100mg product by 17kJ/kg, 37J/kg and 17J/kg (the energy quotient of dietary fibers be calculated as 50% of the quotient of carbohydrates) respectively and then dividing the resulting sum (kJ/100ML) by 4.184; the resulting content is kcal/100mL.

The content of carbohydrates A_1 is calculated according to formular (1):

$$A_1=100-(A_2+A_3+A_4+A_5+A_6) \quad (1)$$

Of which:

A_1 – content of carbohydrates, g/100g;

A_2 - content of proteins, g/100g;

A_3 – content of fats, g/100g;

A_4 - content of water content, g/100g;

A_5 - content of ash, g/100g;

A_6 - content of dietary fibers, g/100g;

[c] only applicable for products with fats肪≥0.8 g/100 kJ

5.4 Optional components

Besides the essential components specified in 5.3, if one or more optional components as shown in table 3 are added into the product or in the label, their content should meet the specification of table 3.

If other components not shown in 5.3 or table 3 are added, their contents should meet relevant regulations of the state.

Table 3 Indices of optional components

Items		Indices	Test method
Vitamin E, mg/100 kJ (kcal)		0.08 - 1.20 (0.33 - 5.02)	GB 5413.9
Vitamin B2, μg/100 kJ (kcal)	≥	13.0 (54.4)	GB 5413.12
Vitamin B6, μg/100 kJ (kcal)	≥	8.4 (35.1)	GB 5413.13
Vitamin B12, μg/100 kJ (kcal)	≥	0.02 (0.08)	GB 5413.14
Nicotinic acid, μg/100 kJ (kcal)	≥	83.7 (350.2)	GB 5413.15
Folic acid, μg/100 kJ (kcal) ≥		1.2 (5.0)	GB 5413.16
Pantothenic acid, μg/100 kJ (kcal)	≥	50.4 (210.9)	GB 5413.17
Vitamin C, mg/100 kJ (kcal)	≥	1.4 (5.9)	GB 5413.18
Biotin, μg/100 kJ (kcal)	≥	0.17 (0.71)	GB 5413.19
Phosphorus, mg/100 kJ (kcal)		8.4 -30.0 (35.1 -125.5)	GB 5413.22
Iodine, μg/100 kJ (kcal)		1.4 - 8.8 (5.9 - 36.8)	GB 5413.23
Potassium, mg/100kJ (kcal)		13 -66 (56 -278)	GB 5413.21

5.5 If carbohydrates (including sucrose, fructose, glucose, glucose syrup or honey) are added into the product, the contents should meet the specification in table 4.

Table 4 Limits of carbohydrates added

Items	Cereal-based complementary foods	High -protein Cereal-based	Biscuits or other Cereal-based	Test method

	for infants and young children	complementary foods for infants and young children	complementary foods for infants and young children	
total amount of carbohydrates /(g/100kJ(kcal)) ≤	1.8 (7.5)	1.2 (5.0)	1.8 (7.5)	Calculated as components
amount of fructose /(g/100kJ(kcal)) ≤	0.9 (3.8)	0.6 (2.5)	0.9 (3.8)	

5.6 Other indices: Other indices should meet the specification of table 5.

Table 5 Other indices

Items	Cereal-based complementary foods for infants and young children	High -protein cereal-based complementary foods for infants and young children	Raw cereal-based complementary foods for infants and young children	Biscuits or other Cereal-based complementary foods for infants and young children [a]	Test method
Water content, % ≤	6.0		13.5	6.0	GB 5009.3
Insoluble dietary fiber, % ≤	5.0				GB 5413.6
[a] The index of water content is not applicable to other Cereal-based complementary foods for infants and young children.					

5.7 Limits of contaminants: they should meet the specification in table 6.

Table 6 Limits of contaminants

Items		Indices	Test method
Lead (mg/kg)	products added with fish, liver and vegetables ≤	0.30	GB 5009.12
	Other products ≤	0.20	
Inorganic arseni (mg/kg)	products added with algae ≤	0.30	GB/T 5009.11
	other the product ≤	0.20	
Nitrate [a] (based on $NaNO_3$), mg/kg ≤		100	GB 5009.33
Nitrite [b] (based on $NaNO_2$), mg/kg ≤		2	
[a] Nitrate index is not applicable to products added with vegetables and fruits.			
[b] Nitrite index is not applicable to products added with beans.			

5.8 Limits of mycotoxins: they should meet the specification of Table 7.

Table 7 Limits of mycotoxins

Item		Index	Test method
Aflatoxin B_1/ (μg/kg)	≤	0.5	GB 5009.24

5.9 Limits of microorganisms: they should meet the specification of Table 8.

Table 8 Limits of Microorganisms

Microorganisms	Sampling plan [a] and limit (If not specified, it should be expressed in cfu/g or cfu/mL)				Test method
	n	c	m	M	
Total colony count [b]	5	2	1000	10000	GB 4789.2
Coliform bacteria	5	2	10	100	GB 4789.3 plate

					counting method
Saimonella	5	0	0/25g	-	GB 4789.4

[a] Subject to GB/T 4789.1.

[b] Not applicable to raw cereal-based complementary foods for infants and young children or products supplemented with probiotics (aerobic and facultative anaerobes) [the total number of viable probiotics should be no less than ≥106CFU/g (mL)].

5.10 Food Additives and nutrient supplements

5.10.1 The quality of food additives and nutrition enhancers should comply with appropriate safety standards and/or relevant regulations.

5.10.2 The use of food additives and nutrition enhancers should should comply with the requirements of GB 2760 and GB 14880.

5.11 Urease activity: the urease activity in products containing components of soybean should meet the specification of Table 9

Table 9 Index of urease activity

Items	Index	Test method
Qualitative determination of urease activity	Negative	GB/T 5413.31

6. Others

6.1 Contents indicated on the label should be subject to specifications of GB 13432. In addition, nutrient ingredients and optional ingredients should be indicated as “content per 100 kJ or 100 kcal”.

6.2 The category name of the product should be on the label according to the specification in 4.1-4.4, for instance, “High -protein cereal-based complementary foods for infants and young children”.

6.3 For cereal-based complementary foods for infants and young children in 4.1, text “Be prepared for consumption with milk or other appropriate nutritious liquids” or similar text should be on the label.