



**National Standard of the People's Republic of China**

**GB 10767-2021**

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**National food safety standard  
Young children formula**

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**Issued by**      **National Health Commission of the People's Republic of China  
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## Foreword

This standard replaces the contents of formulas suitable for young children of 12~36 month of age in GB 10767-2010 “National food safety standard Older infants and young children formula”.

Compared with formulas suitable for young children of 12~36 month of age in GB 10767-2010, the major changes of this standard are as follows:

- the scope of the standard has been revised;
- the requirements for lactose ratio have been added;
- the minimum or maximum values of some nutrients have been revised;
- the minimum or maximum values of some nutrients have been added;
- the test methods have been revised.

# National food safety standard

## Young children formula

### 1 Scope

This standard applies to formulas suitable for young children of 12~36 month of age.

### 2 Terms and Definitions

#### 2.1 Young children formula

It is a product produced by taking milk and milk protein products and/or soybean and their protein products as major protein sources with addition of an appropriate amount of vitamins, minerals and/or other raw materials and only through physical methods. It applies to young children and the energy and nutritional components therein can meet partial nutritional needs of normal young children.

### 3 Technical Requirements

#### 3.1 Raw material requirements

**3.1.1** The raw materials used in the product shall comply with corresponding safety standards and/or relevant provisions, and shall ensure the safety of young children and meet their nutritional needs. It shall not use substances harming young children's nutrition and health.

**3.1.2** The hydrogenated oils and fats shall not be used.

**3.1.3** The irradiated raw materials shall not be used.

#### 3.2 Sensory requirements

The color, taste, odor, structural state and reconstituability of young children formula shall comply with the characteristics of corresponding product and there shall be no foreign materials visible by normal eyesight.

#### 3.3 Essential components

**3.3.1** All essential components contained in the product shall be necessary for young children's growth and development.

**3.3.2** Each 100 mL of the product shall contain 250 kJ (60 kcal)~334 kJ (80 kcal) energy in the ready-to-eat state. The energy shall be calculated by multiplying the contents of proteins, fats and carbohydrates per 100 mL of the product by the energy coefficients 17 kJ/g, 37 kJ/g and 17 kJ/g (8 kJ/g for dietary fiber), respectively, and then summing them up to get value which is expressed in kilojoule per 100 milliliter (kJ/100 mL), finally dividing the sum value by 4.184 to obtain the value expressed in kilocalorie per 100 milliliter (kcal/100 mL).

**3.3.3** The amounts of proteins, fats and carbohydrates contained per 100 kJ (100 kcal) of the product shall comply with the provisions of Table 1.

**Table 1 Protein, fat and carbohydrate indicators**

Nutrients	Indicators				Test methods
	/100 kJ		/100 kcal		
	Minimum	Maximum	Minimum	Maximum	
Protein <sup>a</sup> /g	0.43	0.96	1.8	4.0	GB 5009.5
Fat <sup>b</sup> /g	0.84	1.43	3.5	6.0	GB 5009.6
of which: Linoleic acid/g	0.07	0.33	0.3	1.4	GB 5009.168
$\alpha$ -Linolenic acid/mg	12	N.S. <sup>c</sup>	50	N.S. <sup>c</sup>	
Ratio of linoleic acid to $\alpha$ -linolenic acid	5:1	15:1	5:1	15:1	-
Carbohydrate <sup>d, e</sup> /g	1.8	3.6	7.5	15.0	-

<sup>a</sup> The protein content shall be calculated by nitrogen (N)×6.25.  
<sup>b</sup> The content of *trans*-fatty acids shall be ≤3% of total fatty acids. The total fatty acids refer to the sum of C4~C24 fatty acids.  
<sup>c</sup> N.S. means not specified.

Nutrients	Indicators				Test methods
	/100 kJ		/100 kcal		
	Minimum	Maximum	Minimum	Maximum	
<p><sup>d</sup> The lactose contained in milk-based young children formulas (excluding free-lactose and low-lactose products) shall account for ≥50% of total carbohydrates. (The lactose content in solid free-lactose formulas shall be ≤0.5 g/100 g and that in solid low-lactose formulas shall be ≤2 g/100 g.)</p> <p><sup>e</sup> The carbohydrate content <math>A_1</math> shall be calculated according to Formula (1):</p> $A_1 = 100 - (A_2 + A_3 + A_4 + A_5 + A_6) \dots \dots \dots (1)$ <p>Where:</p> <p><math>A_1</math>—the carbohydrate content, g/100 g;  <math>A_2</math>—the protein content, g/100 g;  <math>A_3</math>—the fat content, g/100 g;  <math>A_4</math>—the moisture content, g/100 g;  <math>A_5</math>—the ash content, g/100 g;  <math>A_6</math>—the dietary fiber content (as addition amount of oligosaccharide and/or polysaccharide), g/100 g.</p>					

### 3.3.4 Vitamins

It shall comply with the provisions of Table 2.

Table 2 Vitamin indicators

Nutrients	Indicators				Test methods
	/100 kJ		/100 kcal		
	Minimum	Maximum	Minimum	Maximum	
Vitamin A <sup>a</sup> /μg RE	18	43	75	180	GB 5009.82
Vitamin D <sup>b</sup> /μg	0.48	1.20	2.0	5.0	GB 5009.82
Vitamin E <sup>c</sup> /mg α-TE	0.14	1.20	0.6	5.0	GB 5009.82
Vitamin K <sub>1</sub> /μg	0.96	6.45	4.0	27.0	GB 5009.158
Vitamin B <sub>1</sub> /μg	14	72	60	300	GB 5009.84
Vitamin B <sub>2</sub> /μg	19	155	80	650	GB 5009.85
Vitamin B <sub>6</sub> /μg	11.0	41.8	46	175	GB 5009.154
Vitamin B <sub>12</sub> /μg	0.041	0.478	0.17	2.00	GB 5413.14
Niacin (nicotinamide) <sup>d</sup> /μg	110	359	460	1500	GB 5009.89
Folic acid/μg	2.4	12.0	10	50	GB 5009.211
Pantothenic acid/μg	96	478	400	2000	GB 5009.210
Vitamin C/mg	2.4	16.7	10	70	GB 5413.18
Biotin/μg	0.41	2.39	1.7	10.0	GB 5009.259

<sup>a</sup> RE means retinol equivalent. 1 μg RE=1 μg of *all-trans*-retinol (vitamin A)=3.33 IU of vitamin A. Vitamin A only includes preformed retinol, and the calculation and claim of vitamin A activity do not include any carotenoid component.  
<sup>b</sup> Calciferol, 1 μg of vitamin D=40 IU of vitamin D.  
<sup>c</sup> 1 mg of d-α-tocopherol=1 mg α-TE (α-tocopherol equivalent); 1 mg of dl-α-tocopherol=0.74 mg α-TE (α-tocopherol equivalent).  
<sup>d</sup> Niacin does not include precursor forms.

### 3.3.5 Minerals

It shall comply with the provisions of Table 3.

Table 3 Mineral indicators

Nutrients	Indicators				Test methods
	/100 kJ		/100 kcal		
	Minimum	Maximum	Minimum	Maximum	
Sodium/mg	N.S. <sup>a</sup>	20	N.S. <sup>a</sup>	84	GB 5009.91
Potassium/mg	18	69	75	290	
Copper/μg	6.9	34.9	29	146	GB 5009.13
Magnesium/mg	1.4	4.3	6.0	18.0	GB 5009.241
Iron/mg	0.24	0.60	1.0	2.5	GB 5009.90
Zinc/mg	0.10	0.31	0.40	1.30	GB 5009.14
Calcium/mg	17	50	71	210	GB 5009.92
Phosphorus/mg	8	26	35	110	GB 5009.87
Calcium phosphorus ratio	1.2:1	2:1	1.2:1	2:1	-
Iodine/μg	1.4	14.1	6	59	GB 5009.267
Chlorine/mg	N.S. <sup>a</sup>	52	N.S. <sup>a</sup>	218	GB 5009.44

Nutrients	Indicators				Test methods
	/100 kJ		/100 kcal		
	Minimum	Maximum	Minimum	Maximum	

<sup>a</sup> N.S. means not specified.

### 3.4 Optional components

**3.4.1** In addition to the essential components in 3.3, if one or more of the components listed in Table 4 are selected to add in product or marked in label, the corresponding contents shall comply with the provisions of Table 4.

**3.4.2** If substances other than those in Table 4 are added to the product, they shall comply with relevant national regulations.

**Table 4 Optional component indicators**

Optional components	Indicators				Test methods
	/100 kJ		/100 kcal		
	Minimum	Maximum	Minimum	Maximum	
Selenium/ $\mu\text{g}$	0.48	2.06	2.0	8.6	GB 5009.93
Choline/mg	4.8	23.9	20	100	GB 5413.20
Manganese/ $\mu\text{g}$	0.24	23.90	1.0	100.0	GB 5009.242
Inositol/mg	1.0	9.6	4	40	GB 5009.270
Taurine/mg	0.8	4.0	3.5	16.7	GB 5009.169
L-carnitine/mg	0.3	N.S. <sup>a</sup>	1.3	N.S. <sup>a</sup>	GB 29989
Docosahexaenoic acid (DHA)/mg	N.S. <sup>a</sup>	9.6	N.S. <sup>a</sup>	40	GB 5009.168
Arachidonic acid (AA/ARA)/mg	N.S. <sup>a</sup>	19.1	N.S. <sup>a</sup>	80	GB 5009.168

<sup>a</sup> N.S. means not specified.

### 3.5 Other indicators

It shall comply with the provisions of Table 5.

**Table 5 Other indicators**

Items	Indicators	Test methods
Moisture <sup>a</sup> /%	$\leq$ 5.0	GB 5009.3
Ash		
Solid products/%	$\leq$ 5.0	GB 5009.4
Liquid products (as total dry matters)/%	$\leq$ 5.3	
Impurity <sup>b</sup>		
Solid products/mg/kg	$\leq$ 12	GB 5413.30
Liquid products/mg/8 L	$\leq$ 2	

<sup>a</sup> Limited to solid products.

<sup>b</sup> Not applicable to products added with vegetables and fruits.

### 3.6 Maximum levels of contaminants

It shall comply with the provisions of GB 2762.

### 3.7 Maximum levels of mycotoxins

It shall comply with the provisions of GB 2761.

### 3.8 Microbiological limits

**3.8.1** For solid products, the microbiological limits shall comply with the provisions of GB 29921, and other microbiological indicators shall comply with the provisions of Table 6.

**3.8.2** For liquid products, they shall comply with the requirements of commercial sterilization, and shall be tested according to the methods specified in GB 4789.26.

**Table 6 Microbiological limit indicators**

Items	Sampling plan <sup>a</sup> and limits (unless otherwise specified, all expressed in CFU/g or CFU/mL)	Test methods
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	<i>n</i>	<i>c</i>	<i>m</i>	<i>M</i>	
Total plate count <sup>b</sup>	5	2	1000	10000	GB 4789.2
Coliforms	5	2	10	100	Plate counting method of GB 4789.3

<sup>a</sup> The analysis and treatment of the samples shall be carried out in accordance with GB 4789.1 and GB 4789.18.  
<sup>b</sup> Not applicable to the products added with active bacteria (aerobic and facultative anaerobic bacteria) [the viable count in each product shall be  $\geq 10^6$  CFU/g (mL)].

### 3.9 Food additives and nutritional fortification substances

**3.9.1** The use of food additives and nutritional fortification substances shall comply with the provisions of GB 2760 and GB 14880.

**3.9.2** The quality of food additives and nutritional fortification substances shall comply with the corresponding standards and/or relevant provisions.

### 3.10 Urease activity

The urease activity of the products taking soybeans or their products as a protein source shall comply with the provisions of Table 7.

**Table 7 Urease activity indicators**

Items	Indicators	Test methods
Qualitative determination of urease activity	Negative	GB 5413.31 <sup>a</sup>

<sup>a</sup> The sampling volume of liquid products shall be converted according to the dry matter content.

## 4 Others

### 4.1 Label

**4.1.1** The product label shall comply with GB 13432 and/or relevant provisions, for the content identification of essential components and optional components, the content labeling of “100 kilojoule (100 kJ)” shall be added.

**4.1.2** The product category, attributes (e.g. product status) and applicable age shall be indicated on the label.

### 4.2 Instructions for use

**4.2.1** Relevant product use, preparation instructions and illustrations, storage conditions shall be clearly stated on the label. When the maximum surface area of the package is less than 100 cm<sup>2</sup> or the product mass is less than 100 g, the illustration may not be labeled.

**4.2.2** Instructions shall give the warning statements to health hazards that may be resulted from improper preparation and improper use.

### 4.3 Packaging

The carbon dioxide and/or nitrogen that complies with the provisions of national food safety standards can be used as packaging medium.