

**GB 14880-2012 Standard for the Use of Nutritional Fortification Substances in  
Foods**



**National Standards of People's Republic of China**

**GB 14880-2012**

**National Food Safety Standard  
Standard for the Use of Nutritional Fortification Substances in Foods**

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## Foreword

This standard referred to the standards of Codex Alimentarius Commission (CAC) 'Codex Stan CAC/GL 09-1987 (amended 1989,1991) General Principles for the addition of Essential Nutrients to Foods' and CAC/GL 10-1979 (revised 2008) Advisory Lists of Nutrient Compounds for Use in Foods for Special Dietary Uses for Infants and Young Children. This standard also referred to the regulation of European Union 'No. 1925/2006 Regulation on the Addition of Vitamins and Minerals and of certain other substances to foods'.

This standard replaced the previous version: the standard GB 14880-1994 < Hygiene Standard for the use of nutritional fortification substances in foods>

Compared to the standard GB 14880-1994, this standard has some changes as follows:

- More technical terms and definitions are added.
- The principles of nutritional fortification, the principles of using nutritional fortification substances and the principles of selecting carriers for nutritional fortification substances are added.
- Based on the risk assessment, the food classification system is combined into this standard. The application of varieties, scope and amount of nutritional fortification substances are adjusted and integrated. Some food categories, which are not suitable for nutritional fortification, are deleted.
- The allowed sources of nutritional fortification substances are increased
- The sources of nutritional fortification substances for food for special dietary uses are increased and the application amounts of some of the nutrients are increased
- The food classification system is added
- The Appendix A 'Rules for implementation of health standards for nutritional fortification substances is deleted. (The Appendix A, Appendix B and Appendix C are standardized appendices. Appendix D is information Appendix)>

The previous issued version replaced by this standard is

- GB 14880-1994

## National Standard for Food Safety

### Standard for the Use of Nutritional Fortification Substances in Foods

#### 1. Scope

This Standard stipulates the principles for the fortification of nutritional fortification substances in food, the principles for the use of nutritional fortification substances and the principles for selecting carrier of nutritional fortification substances. This standard also stipulates the application of varieties, scope and amount of the nutritional fortification substances.

This standard is applicable to all nutritional fortification substances.

#### 2. Terminology and definitions

##### 2.1. Nutritional fortification substances

Nutritional fortification substances are natural, synthetic nutrients and other nutritional components, which are added into food to increase the nutritional value of food.

##### 2.2. Nutrients

A nutrient is a substance that an organism needs to live, grow, develop, reproduce and metabolize. It has special physiological functions. Nutrients include proteins and amino acids, fats and fatty acids, carbohydrates, minerals, vitamins, and etc.

##### 2.3. Other nutritional components (excluding nutrients mentioned in 2.2)

Nutritional components are food ingredients, which have nutritional and physiological functions.

##### 2.4. Fortified food

Fortified foods are those foodstuffs in which a certain amount of nutritional fortification substances are added.

##### 2.5. Food for special dietary uses

These foods must supply a special dietary need that exists by reason of a physical or physiological condition or by reason of a specific disease or disorder. The ingredients of these foods should be significantly different from those of conventional or natural foods.

#### 3. Principles of nutritional fortification

3.1. Nutritional fortification substances can be used in the following situations:

3.2. Nutritional fortification substances can be used to compensate the nutrient loss during food processing or storage.

**3.3.** There is sufficient evidence to show that a certain type of nutrient deficiency exists in a specific group of people with a population of considerable size in a certain geographical area; and the low intake level of the nutrients and adverse health effects caused by nutrient deficiency can be improved by nutritional fortification; and the nutrients can be provided to the people with the nutrient deficiency through fortified foods.

**3.4.** There is sufficient evidence to show that in certain geographic areas, the low intake of certain/some nutrients or nutrient deficiencies are caused by dietary habits or other factors; and the low intake level of the nutrients and adverse health effects caused by the nutrient deficiency can be improve by nutritional fortification and the nutrients can be provided to the people with nutrient deficiency through fortified foods.

**3.5.** To increase the nutritional content of substitutes for traditional food.

**3.6.** Supplement and modify the nutrients and the content of other nutritional substances in food for special dietary uses.

#### **4. Principles for the use of nutritional fortification substances**

**4.1.** The use of nutritional fortification substances should comply with the following principles:

**4.2.** The use of nutritional fortification substances must not lead to excessive intake of the nutrients or/and nutrient imbalance; and must not lead to metabolic disorders.

**4.3.** Nutritional fortification substances should remain stable (in terms of quality) in foods during storage, transport, and consumption.

**4.4.** Additional of nutritional fortification substances must not lead to undesirable changes of foods in terms of colors, taste, flavor, cooking property etc.

**4.5.** The use of nutritional fortification substances should not cause misleading information and misconception to consumers through exaggerating the content of a certain nutritional ingredient.

**4.6.** The use of nutritional fortification substances should not encourage or lead to food consumption models that are contrary to the country's nutrition regulations.

#### **5. The principles of selecting carriers for nutritional fortification substances**

**5.1.** The selection of carriers for nutritional fortification substances should comply with the following principles:

**5.2.** Should select foods that are easy to purchase and obtain by the target population.

**5.3.** The consumption of food carriers should be stable, thus to help calculate the additive amount of nutritional fortification substances, and should be able to avoid excessive levels of nutrients and other nutritional substances in the human body due to excessive intake of the food carriers.

**5.4.** The natural foods, which are already good source of a certain nutrients, should not be used as carriers of this nutrient.

## **6. The regulation of the use of nutritional fortification substances**

**6.1.** The application scope, application amount of nutritional fortification substances should comply with the requirement of Appendix A, the sources of chemicals should comply with the regulation of Appendix B;

**6.2.** The contents of nutrients and other nutritional substances used in foods for special dietary uses should comply with the National Food Safety Regulation, the allowed sources of nutritional fortification substances should comply with the requirement of Appendix C.

## **7. Food classification system**

The food class system is used to define the application scope of nutritional fortification substances. It is only applicable for this standard, please refer to Appendix D If a certain nutritional fortification substances is allowed to use in a certain food category, then this substances can be used in all foodstuffs under this category, except otherwise provided.

## **8. The standard of quality specification**

The uses of nutritional fortification substances should comply with the standard of quality specification and corresponding regulations.

## Appendix A

### Standardized Appendix

#### Regulation on the use of nutritional fortification substances in foods

Nutrients	Classification of food		Application amount/kg
	Food Codes	Classification/Name	
Vitamin A	01.01.03	Modified milk powder	600-1000 µg/kg
	01.03.02	Modified milk powder (excluding milk powder used for pregnant women and children)	3000-9000 µg/kg
		Modified milk powder (for children)	1200-7000 µg/kg
		Modified milk powder (for pregnant women)	2000-10000 µg/kg
	02.01.01.01	Vegetable oil	4000-8000 µg/kg
	02.02.01.02	Margarine and similar products	4000-8000 µg/kg
	03.01	Ice cream and ice confectionery	600-1200 µg/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	3000-7000 µg/kg
	04.04.01.08	Soybean	600-1400 µg/kg
	06.02.01	Rice	600-1200 µg/kg
	06.03.01	Wheat/flour	600-1200 µg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	2000-6000 µg/kg
	07.02.02	Foreign pastry	2330-4000 µg/kg
	07.03	Biscuits	2330-4000 µg/kg
	14.03.01	Milk containing drinks	300-1000 µg/kg
	14.06	Solid beverage	4000-17000 µg/kg
	16.01	Jelly	600-1000 µg/kg
16.06	Puffing food	600-1500 µg/kg	
B-carotene	14.06	Solid beverages	3-6 mg/kg
Vitamin D	01.01.03	Modified milk powder	10-40 µg/kg
	01.03.02	Modified milk powder (excluding milk powder used for pregnant women and children)	63-125 µg/kg
		Modified milk powder (for children)	20-112 µg/kg
		Modified milk powder (for pregnant women)	23-112 µg/kg
	02.02.01.02	Margarine and similar products	125-156 µg/kg
	03.01	Ice cream and ice confectionery	10-20 µg/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	15-60 µg/kg
	04.04.01.08	Soybean	3-15 µg/kg
	06.05.02.03	Lotus root starch	50-100 µg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	12.5-37.5 µg/kg
	07.03	Biscuits	16.7-33.3 µg/kg
	07.05	Other baked products	10-70 µg/kg/kg
	14.02.03	Fruit and vegetable juices (Include fermented products)	2-10 µg/kg
	14.03.01	Milk containing drinks	10-40 µg/kg
	14.04.02.02	Flavored beverages	2-10 µg/kg
	14.06	Solid beverages	10-20 µg/kg
	16.01	Jelly	10-40 µg/kg
16.06	Puffing food	10-60 µg/kg	
Vitamin E	01.01.03	Modified milk powder	12-50 mg/kg

	01.03.02	Modified milk powder (excluding milk powder used for pregnant women and children)	100-310 mg/kg
		Modified milk powder (for children)	10-60 mg/kg
		Modified milk powder (for pregnant women)	32-156 mg/kg
	02.01.01.01	Vegetable oils	100-180 mg/kg
	02.02.01.02	Margarine and similar products	100-180 mg/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	30-70 mg/kg
	04.04.01.08	Soybean	5-15 mg/kg
	05.02.01	Gum candy	1050-1450 mg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	50-125 mg/kg
	14.0	Beverage (excluding beverages covered under 14.01, 14.06)	10-40 mg/kg
	14.06	Solid beverages	76-180 mg/kg
	16.01	Jelly	10-70 mg/kg
Vitamin K	01.03.02	Modified milk powder (for children)	420-750 mg/kg
		Modified milk powder (for pregnant women)	340-680 mg/kg
Vitamin B <sub>1</sub>	01.03.02	Modified milk powder (for children)	1.5-14 mg/kg
		Modified milk powder (for pregnant women)	3-17 mg/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	6-15 mg/kg
	04.04.01.08	Soybean	1-3 mg/kg
	05.02.01	Gum candy	16-33 mg/kg
	06.02	Rice and derived products (rice, rice vermicelli, rice cake)	3-5 mg/kg
	06.03	Wheat flour and derived products	3-5 mg/kg
	06.04	Grain flour (soybean flour only)	3-5 mg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	7.5-17.5 mg/kg
	07.01	Bread	3-5 mg/kg
	07.02.02	Foreign pastry	3-6 mg/kg
	07.03	Biscuits	3-6 mg/kg
	14.03.01	Milk containing beverages	1-2 mg/kg
	14.04.02.02	Flavored beverages	2-3 mg/kg
	14.06	Solid beverages	9-22 mg/kg
	16.01	Jelly	1-7 mg/kg
Vitamin B <sub>2</sub>	01.03.02	Modified milk powder (for children)	8-14 mg/kg
		Modified milk powder (for pregnant women)	4-22 mg/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	6-15 mg/kg
	04.04.01.08	Soybean	1-3 mg/kg
	05.02.01	Gum candy	16-33 mg/kg
	06.02	Rice and derived products (rice, rice vermicelli, rice cake)	3-5 mg/kg
	06.03	Wheat flour and derived products	3-5 mg/kg
	06.04	Grains flour (including soybean flour) and derived products (soybean flour only)	3-5 mg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	7.5-17.5 mg/kg

	07.01	Bread	3-5 mg/kg
	07.02.02	Foreign pastry	3.3-7.0 mg/kg
	07.03	Biscuits	3.3-7.0 mg/kg
	14.03.01	Milk containing drinks	1-2 mg/kg
	14.06	Solid beverages	9-22 mg/kg
	16.01	Jelly	1-7 mg/kg
Vitamin B <sub>6</sub>	01.03.02	Modified milk powder (excluding milk powder used for pregnant women and children)	8-16 mg/kg
		Modified milk powder (for children)	1-7 mg/kg
		Modified milk powder (for pregnant women)	4-22 mg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	10-25 mg/kg
	07.03	Biscuits	2-5 mg/kg
	07.05	Other baked products	3-15 mg/kg
	14.0	Beverages (excluding the foodstuffs mentioned in 14.01 and 14.06)	0.4-1.6 mg/kg
	14.06	Solid beverages	7-22 mg/kg
16.01	Jelly	1-7 mg/kg	
Vitamin B <sub>12</sub>	01.03.02	Modified milk powder (for children)	10-30 µg/kg
		Modified milk powder (for pregnant women)	10-66 µg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	5-10 µg/kg
	07.05	Other baked products	10-70 µg/kg
	14.0	Beverages (excluding the foodstuffs mentioned in 14.01 and 14.06)	0.6-1.8 µg/kg
	14.06	Solid beverages	10-66 µg/kg
	16.01	Jelly	2-6 µg/kg
Vitamin C	01.02.02	Favored fermented product	120-240 mg/kg
	01.03.02	Modified milk powder (excluding milk powder used for pregnant women and children)	300-1000 mg/kg
		Modified milk powder (for children)	140-800 mg/kg
		Modified milk powder (for pregnant women)	1000-1600 mg/kg
	04.01.02.01	Canned fruits	200-400 mg/kg
	04.01.02.02	Puree	50-100 mg/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	400-700 mg/kg
	05.02.01	Gum candy	630-13000 mg/kg
	05.02.02	Sweets other than gum candy	1000-6000 mg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	300-750 mg/kg
	14.02.03	Fruits and vegetable (pulp) juices	250-500 mg/kg
	14.03.01	Milk containing drinks	120-240 mg/kg
	14.04	Water-based flavored beverages	250-500 mg/kg
	14.06	Solid beverage	1000-2250 mg/kg
	16.01	Jelly	120-240 mg/kg
Niacin (or nicotinamide)	01.03.02	Modified milk powder (for children)	23-47 mg/kg
		Modified milk powder (for pregnant women)	42-100 mg/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	60-120 mg/kg
	04.04.01.08	Soybean	10-30 mg/kg



	06.02	Rice and derived products (rice, rice vermicelli, rice cake)	40-50 mg/kg
	06.03	Wheat flour and derived products	40-50 mg/kg
	06.04	Grain flour (including soybean flour) and derived products (soybean flour only)	40-50 mg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	75-218 mg/kg
	07.01	Bread	40-50 mg/kg
	07.03	Biscuits	30-60 mg/kg
	14.0	Beverages (excluding the foodstuffs mentioned in 14.01 and 14.06)	3-18 mg/kg
	14.06	Solid beverages (excluding soy milk powder)	110-330 mg/kg
Folic acid	01.01.03	Modified milk powder	400-1200 µg/kg
	01.03.02	Modified milk powder (excluding milk powder used for pregnant women and children)	2000-5000 µg/kg
		Modified milk powder (for children)	420-3000 µg/kg
		Modified milk powder (for pregnant women)	2000-8200 µg/kg
	06.02.01	Rice (washing-face rice only)	1000-3000 µg/kg
	06.03.01	Wheat flour	1000-3000 µg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	1000-2500 µg/kg
	07.03	Biscuits	390-780 µg/kg
	07.05	Other baked products	2000-7000 µg/kg
	14.02.03	Fruits and vegetable (pulp) juices	157-313 µg/kg
	14.06	Solid beverages	600-6000 µg/kg
	16.01	Jelly	50-100 µg/kg
Pantothenic acid	01.03.02	Modified milk powder (for children)	6-60 mg/kg
		Modified milk powder (for pregnant women)	20-80 mg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	30-50 mg/kg
	14.04.01	Carbonated drinks	1.1-2.2 mg/kg
	14.04.02.02	Flavored drinks	1.1-2.2 mg/kg
	14.05.01	Tea drinks	1.1-2.2 mg/kg
	14.06	Solid beverages	22-80 mg/kg
16.01	Jelly	2-5 mg/kg	
Biotin	01.03.02	Modified milk powder (for children only)	38-76 µg/kg
Chlorine	01.03.02	Modified milk powder (for children only)	800-3000 mg/kg
		Modified milk powder (for pregnant women only)	1600-3400 mg/kg
	16.01	Jelly	50-100 mg/kg
Inositol	01.03.02	Modified milk powder and modified cream powder (including flavored milk powder and flavored cream powder)	210-250 mg/kg
	14.02.03	Fruits and vegetable (pulp) juices	60-120 mg/kg
	14.04.02.02	Flavored beverages	60-120 mg/kg
<b>Minerals</b>			
Iron	01.01.03	Modified milk powder	10-20 mg/kg
	01.03.02	Modified milk powder (excluding milk	60-200 mg/kg

	powder used for pregnant women and children)		
	Modified milk powder (for children)	25-135m mg/kg	
	Modified milk powder (for pregnant women)	50-280 mg/kg	
04.04.01.07	Grain flour (soybean flour only) and derived products	46-80 mg/kg	
05.02.02	Sweets other than gum candy	600-1200 mg/kg	
06.02	Rice and derived products (Rice, rice vermicelli, rice cake)	14-26 mg/kg	
06.03	Wheat flour and derived products	14-26 mg/kg	
06.04	Grain flour (soybean flour only)	14-26 mg/kg	
06.06	Ready-to-eat cereals, including oats and rolled oats	35-80 mg/kg	
07.01	Bread	14-26 mg/kg	
07.02.02	Foreign pastry	40-60 mg/kg	
07.03	Biscuits	40-60 mg/kg	
07.05	Other baked products	50-200 mg/kg	
12.04	Soy sauce	180-260 mg/kg	
14.0	Beverages (excluding the foodstuffs mentioned in 14.01 and 14.06)	10-20 mg/kg	
14.06	Solid beverages (excluding the food mentioned in 14.06.02)	95-220 mg/kg	
16.01	Jelly	10-20 mg/kg	
Calcium	01.01.03	Modified milk powder	250-1000 mg/kg
	01.03.02	Modified milk powder (for children)	3000-7200 mg/kg
		Modified milk powder (for pregnant women)	3000-6000 mg/kg
	01.06	Cheese	2500-10000 mg/kg
	03.01	Ice cream and ice cream cake products	2400-3000 mg/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	1600-8000 mg/kg
	06.02	Rice and derived products (rice, rice vermicelli, rice cake)	1600-3200 mg/kg
	06.03	Wheat flour and derived products	1600-3200 mg/kg
	06.04	Grain flour (Including soybean flour) and derived products (soybean flour only)	1600-3200 mg/kg
	06.05.02.03	Lotus root starch	2400-3200 mg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	2000-7000 mg/kg
	07.01	Bread	1600-3200 mg/kg
	07.02.02	Foreign pastry	2670-5330 mg/kg
	07.03	Biscuits	2670-5330 mg/kg
	07.05	Other baked products	3000-15000 mg/kg
	08.03.05	Meat sausage	850-1700 mg/kg
	08.03.07.01	Dry meat floss	2500-5000 mg/kg
	08.03.07.02	Bak kwa products	1700-2550 mg/kg
	10.03.01	Dehydrated egg products	190-650 mg/kg
	12.03	Vinegar	6000-8000 mg/kg
	14.0	Beverages (excluding the foodstuffs mentioned in 14.01 and 14.06)	160-1350 mg/kg
	14.02.03	Fruits and vegetable (pulp) juices	1000-1800 mg/kg
	14.06	Solid beverages	2500-10000 mg/kg
	16.01	Jelly	390-800 mg/kg

Zinc	01.01.03	Modified milk powder	5-10 mg/kg
	01.03.02	Modified milk powder (excluding milk powder used for pregnant women and children)	30-60 mg/kg
		Modified milk powder (for children)	50-175 mg/kg
		Modified milk powder (for pregnant women)	30-140 mg/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	29-55.5 mg/kg
	06.02	Rice and derived products (rice, rice vermicelli, rice cake)	10-40 mg/kg
	06.03	Wheat flour and derived products	10-40 mg/kg
	06.04	Grain flour (soybean flour only)	10-40 mg/kg
	06.06	Ready-to-eat cereals, including oats and rolled oats	37.5-112.5 mg/kg
	07.01	Bread	10-40 mg/kg
	07.02.02	Foreign pastry	45-80 mg/kg
	07.03	Biscuits	45-80 mg/kg
	14.0	Beverages (excluding the foodstuffs mentioned in 14.01 and 14.06)	3-20 mg/kg
	14.06	Solid beverages (excluding soy milk powder)	60-180 mg/kg
16.01	Jelly	10-20 mg/kg	
Selenium	01.03.02	Modified milk powder (excluding children)	140-280 µg/kg
		Modified milk powder (for children only)	60-130 µg/kg
	06.02	Rice and derived products (rice, rice vermicelli, rice cake)	140-280 µg/kg
	06.03	Wheat flour and derived products)	140-280 µg/kg
	06.04	Grain flour (Including soybean flour) and derived products (soybean flour only)	140-280 µg/kg
	07.01	Bread	140-280 µg/kg
	07.03	Biscuits	30-110 µg/kg
	14.03.01	Milk containing drinks	50-200 µg/kg
Magnesium	01.03.02	Modified milk powder (excluding pregnant women and children)	300-1100 mg/kg
		Modified milk powder (for pregnant women only)	300-2800 mg/kg
	01.03.02	Modified milk powder (for children only)	300-2300 mg/kg
	14.0	Beverages (excluding the food mentioned in 14.01 and 14.04.01)	30-60 mg/kg
	14.06	Solid beverages	1300-2100 mg/kg
Copper	01.03.02	Modified milk powder (excluding pregnant women and children)	3-7.5 mg/kg
		Modified milk powder (for children only)	2-12 mg/kg
		Modified milk powder (for pregnant women only)	4-23 mg/kg
Manganese	01.03.02	Modified milk powder (excluding pregnant women and children)	0.3-4.3 mg/kg
		Modified milk powder (for children only)	7-15 mg/kg
		Modified milk powder (for pregnant	11-26 mg/kg

		women only)	
Potassium	01.03.02	Modified milk powder (excluding pregnant women and children)	7000-14100 mg/kg
Phosphorous	04.04.01.07	Grain flour (soybean flour only) and derived products	1600-3700 mg/kg
	14.06	Solid beverages	1960-7040 mg/kg
<b>Others</b>			
L-Lysine	06.02	Rice and derived products (rice, rice vermicelli, rice cake)	1-2 g/kg
	06.03	Wheat flour derived products	1-2 g/kg
	06.04	Grain flour (Including soybean flour) and derived products (soybean flour only)	1-2 g/kg
	07.01	Bread	1-2 g/kg
Taurine	01.03.02	Modified milk powder	0.3-0.5 g/kg
	04.04.01.07	Grain flour (soybean flour only) and derived products	0.3-0.5 g/kg
	04.04.01.08	Soybean	0.06-0.1 g/kg
	14.03.01	Milk containing beverages	0.1-0.5 g/kg
	14.04.02.01	Beverage for special uses	0.1-0.5 g/kg
	14.04.02.02	Flavored beverages	0.4-0.6 g/kg
	14.06	Solid beverages	1.1-1.4 g/kg
L-carnitine	01.03.02	Modified milk powder (excluding children usage)	300-400 mg
		Modified milk powder (for children only)	50-150 mg/kg
	14.02.03	Fruit and vegetable (pulp) juices	600-3000 mg/kg
	14.03.01	Milk containing drinks	600-3000 mg/kg
	14.04.02.01	Products with special uses (for sports beverages only)	100-1000 mg/kg
	14.04.02.02	Flavored beverages	600-3000 mg/kg
	14.06	Solid beverages	6000-30000 mg/kg
γ-linoelic acid	01.03.02	Modified milk powder and modified cream powder (including flavored milk powder and flavored cream powder)	20-50 g/kg
	02.01.01.01	Vegetable oil	20-50 g/kg
	14.0	Beverages (excluding packaged drinking water mentioned in 14.01)	20-50 g/kg
Lutein	01.03.02	Modified milk powder (for children only, measurements of liquids will be done after dilution)	1620-2700 µg/kg
Oligofructose	01.03.02	Modified milk powder (For children and pregnant women)	≤64.5 g/kg
1,3-dioleoyl-2-palmitoyl-glycerol	01.03.02	Modified milk powder (for children only, measurements of liquids will be done after dilution)	24-96 g/kg
Arachidonic acid (AA or ARA)	01.03.02	Modified milk powder (for children only)	≤1% (percentage of total fatty acids)
DHA	01.03.02	Modified milk powder (for children only)	≤0.5% (percentage of total fatty acids)
		Modified milk powder for pregnant women only)	300-1000 mg/kg
Lactorferrin	01.01.03	Modified milk products	≤1.0 g/kg

	01.02.02	Flavored fermented products	≤1.0 g/kg
	14.03.01	Milk containing beverages	≤1.0 g/kg
Calcium casein peptide	06.0	Rice and derived products (rice, rice vermicelli, rice cake) (excluding products covered under 06.01 and 07.0)	≤1.6 g/kg
	14.0	Beverages (Excluding beverages covered in 14.01)	≤1.6 g/kg (Usage can be increased after dilution for solid beverages)
Casein phosphopeptides	01.01.03	Modified milk products	≤1.6 g/kg
	01.02.02	Flavored fermented products	≤1.6 g/kg
	6.0	Rice and derived products (rice, rice vermicelli, rice cake) (excluding products covered under 06.01 and 07.0)	≤1.6 g/kg
	14.0	Beverages (excluding the foodstuffs mentioned in 14.01 and 14.06)	≤1.6 g/kg (Usage can be increased after dilution for solid beverages)
A The use of table A.1 is in accordance to the categorization number and name of product			

**Appendix B**  
**Standardized Appendix**  
**List of allowed source of nutritional fortification substances**

<b>Nutrients</b>	<b>The source of nutritional compounds</b>
Vitamin A	Retinol acetate (Vitamin A acetate) Retinol palmitate (Vitamin A palmitate) B-carotene
B-carotene	B-carotene
Vitamin D	Ergocalciferol (Vitamin D <sub>2</sub> ) Cholecalciferol (Vitamin D <sub>3</sub> )
Vitamin E	d-α tocopherol dl-α tocopherol dl-α tocopheryl acetate dl-α tocopheryl acetate Mixed tocopherol concentrate Vitamin E succinate calcium d-α-tocopherol succinate dl-α-tocopherol succinate
Vitamin K	Phytonadione
Vitamin B <sub>1</sub>	Thiamine hydrochloride Thiamine mononitrate
Vitamin B <sub>2</sub>	Riboflavin Riboflavin-5'-phosphate
Vitamin B <sub>6</sub>	Pyridoxine phosphate 5-pyridoxine phosphate
Vitamin B <sub>12</sub>	Cyanocobalamine Cyanocobalamine hydrochloride Hydroxocobalamin
Vitamin C	L-ascorbic acid Calcium L-ascorbate Vitamin C magnesium phosphate Sodium L-ascorbate L-ascorbic acid, L-ascorbic acid, potassium -6 - palmitate (ascorbyl palmitate)
Niacin	Niacin Nicotinamide
Folic acid	Folic acid
Pantothenic acid	D-calcium pantothenate D-sodium pantothenate
Biotin	D-biotin
Choline	Choline Choline bitartrate
Inositol	Inositol

<p>Iron</p>	<p>Ferrous sulfate          Ferrous gluconate          Ferric ammonium citrate          Ferrous fumarate          Ferric citrate          Ferrous lactate          Hemin          Ferric pyrophosphate          Iron porphyrin          Ferrous glycine          Ferrum redactum          Sodium iron EDTA          Carbonyl iron          Ferrous carbonate          Ferrous citrate          Ferrous fumarate          Ferrous succinate          Heme iron          Electrolytic iron</p>
<p>Calcium</p>	<p>Calcium Carbonate          Calcium gluconate          Calcium citrate          Lactate          L-lactate          Dicalcium          L-threonate          Bisglycinatocalcium          Calcium Aspartate          Calcium citrate malate          Calcium acetate (calcium acetate)          Calcium chloride          Tricalcium phosphate (phosphate)          Vitamin E succinate calcium          Glycerol phosphate          Calcium oxide          Calcium sulfate          Bone powder (superfine fresh bone meal)</p>
<p>Zinc</p>	<p>Zinc sulfate          Zinc gluconate          Zinc glycinate          Zinc oxide          Zinc lactate          Zinc citrate          Zinc chloride</p>

	Zinc acetate Zinc carbonate
Selenium	Selenite Selenium Sodium Selenoproteins Se mushroom powder L-Se - methyl selenocysteine selenide carrageenan (only for 14.03.01 milk drinks) selenium yeast (only for 14.03.01 milk drinks)
Magnesium	Magnesium Magnesium chloride Magnesia Magnesium carbonate Magnesium hydrogen phosphate Magnesium gluconate
Copper	Copper sulfate Copper gluconate Copper citrate Copper carbonate
Manganese	Manganese sulfate Manganese chloride Manganese carbonate Manganese citrate Manganese gluconate
Potassium	Potassium gluconate Potassium citrate Potassium dihydrogen phosphate Dipotassium hydrogen phosphate Potassium chloride
Phosphorus	Calcium phosphate Calcium hydrogenphosphate
L-Lysine	L-lysinehydrochloride L-lysine-aspartate
Taurine	Aminoethanesulfonic acid
L-carnite	L-carnitine-L-tartrate L-carnitine
γ-linoelic acid	γ-linoelic acid
Lutein	Lutein (source: marigold)
Oligofructose	Oligofructose (source: chicory)
1,3-dioleoyl-2-palmitoyl-glycerol	1,3-dioleoyl-2-palmitoyl-glycerol
Arachidonic acid (AA or ARA)	Arochidonic acid oil (source: Mortierella alpine)
DHA	DHA single cell oil, Source: schizochytrium sp., Ulkenia amoeboida, crypthecodinium cohnii, tuna oil
Calcium casein peptide	Calcium casein peptide
Casein phosphopeptides	Casein phosphopeptides



## Appendix C Standardized Appendix

### List of source of nutritional fortification substances for food for special dietary uses

#### C.1: List of source of nutritional fortification substances for food for special dietary uses

Nutrients	The source of nutritional compounds
Vitamin A	Retinol acetate (Vitamin A acetate) Retinol palmitate (Vitamin A palmitate) B-carotene All-trans-retinol
Vitamin D	Ergocalciferol (Vitamin D <sub>2</sub> ) Cholecalciferol (Vitamin D <sub>3</sub> )
Vitamin E	d-α tocopherol dl-α tocopherol dl-α tocopheryl acetate dl-α tocopheryl acetate Mixed tocopherol concentrate d-α-tocopherol succinate
Vitamin K	Phytonadione
Vitamin B <sub>1</sub>	Thiamine hydrochloride Thiamine mononitrate
Vitamin B <sub>2</sub>	Riboflavin Riboflavin-5'-phosphate
Vitamin B <sub>6</sub>	Pyridoxine phosphate 5-pyridoxine phosphate
Vitamin B <sub>12</sub>	Cyanocobalamine Cyanocobalamine hydrochloride
Vitamin C	L-ascorbic acid Sodium L-ascorbate Calcium L-ascorbate L-ascorbic acid, potassium ascorbate -6 – palmitate (ascorbyl palmitate)
Niacin	Niacin Nicotinamide
Folic acid	Folic acid
Pantothenic acid	D-calcium pantothenate D-sodium pantothenate
Biotin	D-biotin
Choline	Choline chloride Choline bitartrate
Inositol	Inositol
Sodium	Sodium bicarbonate Sodium dihydrogen phosphate Sodium citrate Sodium

	Disodium hydrogen phosphate
Potassium	Potassium gluconate Potassium citrate Potassium dihydrogen phosphate Dipotassium hydrogen phosphate Potassium chloride
Copper	Copper sulfate Copper gluconate Copper citrate Copper carbonate
Magnesium	Magnesium sulfate Magnesium chloride Magnesium oxide Magnesium carbonate Magnesium hydrogen phosphate Magnesium gluconate
Iron	Ferrous sulfate Ferrous gluconate Ferric ammonium citrate Ferrous fumarate Ferric citrate Ferric pyrophosphate Sodium iron EDTA (only for food supplement nutritional supplements)
Zinc	Zinc sulfate Zinc gluconate Zinc oxide Zinc lactate Zinc citrate Zinc chloride Zinc acetate
Manganese	Manganese sulfate Manganese chloride Manganese carbonate Manganese citrate Manganese gluconate
Calcium	Calcium carbonate Calcium gluconate Calcium citrate L- calcium lactate Calcium hydrogenphosphate Tricalcium phosphate Calcium phosphate Calcium glycerophosphate Calcium oxide

	Calcium sulfate
Phosphorus	Calcium phosphate Calcium hydrogenphosphate
Iodine	Potassium iodide Sodium iodide Potassium iodate
Selenium	Selenium Sodium selenite
Chromium	Chromium sulfate Chromic chloride
Molybdenum	Sodium molybdate Ammonium molybdate
Taurine	Taurine (aminoethyl sulfonic acid)
L-methionine (L-methionine)	Non animal origin
L-tyrosine	Non animal origin
L-tryptophane	Non-animal origin
L-carnitine	L-carnitine L-carnitine-tartrate
DHA	DHA single cell oil, Source: schizochytrium sp., Ulkenia amoeboida, cryptocodinium cohnii, tuna oil
Arachidonic acid (AA)	Arachidonic acid oil (source: Mortierella alpine)

## C.2 Other nutrients and their application amount used in formula for infants and young children

Name	Product category	Name of product type	Application amount
Galacto-Oligosaccharides	13.01 13.02.01	Infant formula Infant cereal food supplements	Used alone or in combination, the total amount of these substances cannot exceed 64.5g/kg
Fructo-oligosaccharide			
Polyfructose (contain Fructo-oligosaccharide)			
Raffinose			
Polydextrose	13.01	Infant formula	15.6 g/kg ~ 31.25 g/kg
1,3-dioleoyl-2-palmitoyl-glycerol	13.01.01	Infant formula	32-96 g/kg
	13.01.02	Older infants and infant formula food	24-96 g/kg
	13.01.03	Infant formula for special medical purposes	32-96 g/kg
Lutein	13.01.01	Infant formula	300-2000 µg /kg
	13.01.02	Older infants and infant formula food	1620-4230 µg/kg
	13.01.03	Infant formula for special medical purposes	300-2000 µg/kg
DHA	13.02.01	Infant cereal food supplements	≤1150 mg/kg
Arachidonic acid (AA or ARA)	13.02.01	Infant cereal food supplements	≤2300 mg/kg
Nucleotie Sources including the following compounds: Adenosine-5'-monophosphate Adenosine'-monophosphate disodium salt Cytidine-5'-monophosphate Cytidine-5'-monophosphate disodium salt Guanosine-5'-monophosphate Guanosine-5'-monophosphate disodium salt Inosine-5'-monophosphate Inosine-5'-diphosphoric acid disodium salt Urdine-5'-monophosphate Urdine-5'-monophosphate disodium salt	13.01	Infant formula	0.12-0.58g/kg (in terms of total nucleotides)
Lactoferrin	13.01	Infant formula	≤1.0 g/kg
Casein calcium peptide	13.01	Infant formula	≤3.0 g/kg
	13.02	Infant food supplements	≤3.0 g/kg
Casein phosphopeptides	13.01	Infant formula	≤3.0 g/kg
	13.02	Infant food supplements	≤3.0 g/kg
a. The application amount shown above is limited in powdered infant formula. In the liquid infant formula, the amount should be calculated based on the corresponding dilution factor.			

## Appendix D

### Information Appendix

#### Classification of food as carriers of nutritional fortification substances

Food codes	Classification/name
01.0	Milk and dairy products (excluding food for special dietary uses mentioned in 13.0)
01.01	Milk and modified milk
01.01.01	Pure milk (whole milk, partly skimmed, skimmed), including reconstituted milk
01.01.02	Sterilized milk
01.01.03	Modified milk
01.02	Fermented milk
01.02.01	Plain fermented milk (whole milk, partly skimmed, skimmed)
01.02.02	Flavored fermented milk and fruit fermented milk
01.03	Milk powder (including milk powder with sugar added), cream powder and its modified products
01.03.01	Milk powder (whole milk, skimmed, partly skimmed) and cream powder
01.03.02	Modified milk powder and modified cream powder (including flavored milk powder and flavored cream)
01.04	Condensed milk and its modified products
01.04.01	Condensed milk (plain)
01.04.02	Modified condensed milk (including sweet condensed milk, flavored sweet condensed milk and other modified condensed milk manufactured by non-milk ingredients)
01.05	Cream (cream) and similar products
01.06	Cheese and processed cheese
01.07	Ready-to-eat flavored deserts or their pre-made products manufactured by using milk as the main ingredient (excluding ice cream and flavored yogurt)
01.08	Other milk derived products (whey powder, casein powder etc.)
02.0	Fats, oils and emulsified fat products
02.01	Anhydrous fats and oils
02.01.01	Vegetable oils
02.01.01.01	Vegetable oils
02.01.01.02	Hydrogenated vegetable oils
02.01.02	Animal fats (lard, butter, fish oil and other animal fats)
02.01.03	Anhydrous butter, anhydrous cream,
02.02	Water-in-oil or oil-in-water emulsified product
02.02.01	Emulsified products with fat content more than 80%
02.02.01.01	Butter and condensed butter
02.02.01.02	Margarine and similar products (e.g. mixture of butter and margarine)
02.02.02	Emulsified products with fat content less than 80%
02.03	Emulsified products, including the mixed and/or flavored emulsified products (excluding the products mentioned in 02.02)
02.04	Fat-based desserts
02.05	Other fats for fat-based products
03.0	Frozen drinks
03.01	Ice-cream
03.02	Ice-cream
03.03	Flavored ice, popsicles
03.04	Edible ice
03.05	Other frozen drinks
04.0	Fruits, vegetables (including root vegetables), beans, edible mushrooms, algae, nuts, seeds etc.
04.01	Fruits
04.01.01	Fresh fruits

04.01.02	Processed fruits
04.01.02.01	Canned fruits
04.01.02.02	Puree
04.02	Vegetables
04.02.01	Fresh vegetables
04.02.02	Processed vegetables
04.03	Edible mushroom and algae
04.03.01	Fresh edible mushroom and algae
04.03.02	Processed edible mushroom and algae
04.04	Bean products
04.04.01	Non-fermented bean products
04.04.01.01	Tofu (north tofu, south tofu, lactone tofu, frozen tofu)
04.04.01.02	Dried tofu
04.04.01.03	Processed dried tofu
04.04.01.04	Bean curd sticks (bean curd sticks, oily bean curd sheets)
04.04.01.05	New-type bean products (puffed food made from, veg-meat)
04.04.01.06	Cooked bean products
04.04.01.07	Grain flour (soybean flour only) and derived products
04.04.01.08	Soybean
04.04.02	Fermented bean products
04.04.02.01	Pickled bean curd
04.04.02.02	Fermented soya beans and derived products (including natto)
04.04.03	Other bean products
04.05	Nuts and seeds
04.05.01	Fresh nuts and seeds
04.05.02	Processed Nuts and seeds
05.0	Cocoa products, chocolate and derived products (chocolate substitutes) and candy
05.01	Cocoa products, chocolate and derived products including chocolate substitutes
05.01.01	Cocoa products using cocoa as the main ingredient (cocoa butter, powder, spread, paste, filling)
05.01.02	Chocolate and derived products, cocoa products (excluding cocoa products mentioned in 05.01.01)
05.01.03	Chocolate substitutes and chocolate similar products made from cocoa substitutes
05.02	Candy
05.02.01	Hard candy
05.02.02	Hard bonbons
05.03	Candy and chocolate coated products
05.04	Coating of candy and chocolate products
06.0	Decorative candy (e.g. garnish, cake decoration), topping (non-fruit materials) and syrup
06.01	Cereals and derived products, including rice, flour, coarse grain, root crops, pulse and corn starch (excluding the Bakery products mentioned in 07.0)
06.02	Cereals
06.02.01	Rice and derived products (rice, rice vermicelli, rice cake)
06.02.02	Rice
06.02.03	Rice products
06.02.04	Rice flour (including glutinous rice flour)
06.03	Rice vermicelli
06.03.01	Wheat flour and derived products
06.03.02	Other special-purpose flour
06.04	Batter (e.g. batter used in cooking fish and poultry), fried coating powder, frying powder
06.04.01	Coarse grain flour
06.04.02	Coarse grained flour derived products
06.04.02.01	Caned mixed congee
06.04.02.02	Other coarse grain derived products
06.05	Starch and derived products
06.05.01	Edible starch

06.05.02	Starch derived products
06.05.02.01	Vermicelli, rice noodle
06.05.02.02	Prawn chips
06.05.02.03	Lotus root starch
06.05.02.04	Tapioca ball
06.06	Ready-to-eat cereals, including oats and rolled oats
06.07	Instant rice or instant noodle
06.08	Frozen rice or noodle
06.09	Cereal and starch dessert (e.g. rice pudding, cassava pudding)
06.10	Fillings made from cereals
07.0	Bakery products
07.01	Bread
07.02	Pastry
07.02.01	Chinese pastry
07.02.02	Western pastry
07.02.03	Moon cake
07.02.04	Topping
07.03	Biscuit
07.03.01	Sandwich and decorative crackers
07.03.02	Waffles
07.03.03	Egg rolls
07.03.04	Other biscuits
07.04	Fillings of bakery products
07.05	Other bakery products
08.0	Meat and meat products
08.01	Raw fresh meat
08.02	Pre-made meat products
08.03	Cooked meat products
08.03.01	Stewed meat products
08.03.02	Smoked, barbecued, roasted meat
08.03.03	Deep-fried meat
08.03.04	Western ham (roasted, smoked, steamed ham)
08.03.05	Sausages
08.03.06	Fermented meat products
08.03.07	Cooked dried meat products
08.03.07.01	Dried meat floss
08.03.07.02	Dried meat
08.03.07.03	Fried meat crisps
08.03.08	Canned meat
08.03.09	Edible sausage casings
08.03.10	Other meat and derived products
09.0	Aquatic products and derived products (including fish, crustacean, shellfish, mollusk, echinoderms and derived products)
09.01	Fresh aquatic products
09.02	Frozen aquatic and derived products
09.03	Pre-made aquatic products (semi-manufactured products)
09.04	Cooked dried aquatic products (ready-to-eat)
09.05	Canned aquatic products
09.06	Other aquatic products and derived products
10.0	Eggs and derived products
10.01	Fresh eggs
10.02	Processed eggs (the physical properties are not changed)
10.03	Egg product (the physical properties are changed)
10.03.01	Dehydrated egg products (e.g. egg white powder, egg yolk powder, egg white tablet)
10.03.02	Thermo-coagulated egg products (egg cheese, thousand-year egg sausages)
10.03.03	Frozen egg products

10.03.04	Liquid eggs
10.04	Other egg products
11.0	Sugar, including honey
11.01	Sugar
11.01.01	Sugar and sugar products (e.g. sucrose, beet sugar, crystal sugar, fructose etc.)
11.01.02	Other sugar and syrup (brown sugar, brown granulated sugar, maple syrup)
11.02	Starch sugar (fructose, glucose, maltose; partially invert sugar, including malaises)
11.03	Honey and pollen
11.04	Table sugar
11.05	Flavored syrup
11.06	Other sweetener
12.0	Condiment
12.01	Salt and salt substitutes
12.02	Flavor enhancer
12.03	Vinegar
12.04	Soy sauce
12.05	Sauces and derived products
12.06	--
12.07	Cooking wine and derived products
12.08	--
12.09	Spices
12.10	Mixed seasonings
12.10.01	Solid mixed seasonings
12.10.02	Semi-solid mixed seasonings
12.10.03	Liquid mixed seasoning (excluding 12.03, 12.04)
12.11	Other seasonings
13.0	Food for special dietary uses
13.01	Formula for infant and young children
13.01.01	Infant formula
13.01.02	Formula for older infant and young children
13.01.03	Infant formula for special medical purpose
13.02	Complementary foods for infants and young children
13.02.01	Infant cereal food supplements
13.02.02	Canned infant complementary food
13.03	Formula for special medical purpose (excluding the products mentioned in 13.01)
13.04	Other foods for special dietary uses except for the products mentioned in 13.01-13.03)
13.05	Food for special dietary uses (excluding products mentioned in 13.01-13.04)
14.0	Beverages
14.01	Packaged drinking water
14.02	Fruit and vegetable juices
14.02.01	Fruit and vegetable juices (squash)
14.02.02	Condensed fruit and vegetable juice (squash)
14.02.03	Fruit and vegetable (pulp) juices
14.03	Protein containing drinks
14.03.01	Milk containing drinks
14.03.02	Vegetable protein containing drinks
14.03.03	Compound protein beverages
14.04	Water-based flavored beverages
14.04.01	Carbonated drinks
14.04.02	Non-carbonated beverages
14.04.02.01	Beverages for special purpose (including sports drinks, nutritional drinks etc.)
14.04.02.02	Flavored beverages (fruit flavored drinks, flavored milk, tea flavored drinks and other flavored beverages)
14.05	Tea, coffee, botanical beverages
14.05.01	Tea
14.05.02	Coffee



14.05.03	Botanical beverages (excluding fruit and vegetable juices)
14.06	Solid beverages
14.06.01	Fruit flavored solid beverages
14.06.02	Protein containing solid beverages
14.06.03	Instant coffee
14.06.04	Other kinds of solid beverages
14.07	--
14.08	Other beverages
15.0	Liquors
15.01	Distilled spirits
15.02	Mixed liquors
15.03	Fermented liquors
16.0	Others (excluding those mentioned in 01.0-15.0)
16.01	Jelly
16.02	Tea, coffee
16.03	Collagen casings
16.04	Yeast products
16.05	Fried food
16.06	Puffing foods
16.07	Others