

Food Code
Chapter 4 Standards and Specifications for
Individual Food Categories

1. Ice cream products

An ice cream product refers to a product that is frozen or eaten after frozen and includes ice cream, sweetened ice, ice cream powder, and ice cream mix.

3-1 Ice cream

1) Definition

Ice cream refers to a product that uses raw milk and dairy products as the main ingredients and is made by adding food or food additives, etc. to the main ingredients and then freezing or hardening the ingredients.

2) Manufacturing and processing standards

- (1) If eggs are used, the surface of eggshells shall be cleaned and sterilized before broken.
- (2) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (3) It is recommended that milk fat globules be homogenized to not larger than 2 microns in size in order to improve the texture of a product.
- (4) Pasteurization shall be conducted at 68.5 ° for 30 minutes or longer or in a method with the same or better effectiveness (however, it is possible not to conduct a pasteurization process for a product containing lactic acid bacteria if appropriate).
- (5) Care shall be taken to prevent contamination by microorganisms when other raw materials are added after the pasteurization process is completed.
- (6) Products shall be filled and packaged with automated machinery.

3) Content standards for main ingredients

(1) Definition

- <1> Milk fat: fat obtained from milk
- <2> Non-fat milk solid: milk solid that has the same ingredients as skim milk
- <3> Milk solid: the mixture of milk fat powder and non-fat milk solid
- <4> Products containing lactic acid bacteria: ice cream labeled as products containing lactic acid bacteria or lactic acid bacteria fermented milk
- <5> Lactic acid bacteria: include *lactobacillus*, *streptococcus lactis*, and *lactobacillus bifidus*.

(2) Content standards

- <1> Ice cream
 - <A> Not less than 6% of milk fat
 - Not less than 16% of milk solid
- <2> Ice milk
 - <A> Not less than 2% of milk fat
 - Not less than 7% of milk solid
- <3> Sherbet
 - <A> Not less than 2% of non-fat milk solid
- <4> Low-fat ice cream
 - <A> Not more than 2% of crude fat
 - Not less than 10% of non-fat milk solid
- <5> Non-fat ice cream
 - <A> Not less than 5% of crude fat
 - Not less than 5% of non-fat milk solid

4) Specifications

Types Specifications	Ice cream, low-fat ice cream	Ice milk, sherbet, non-fat ice cream
(1) Characteristics	Shall have distinctive flavor and be free of foreign taste or odor	Shall have distinctive flavor and be free of foreign taste or odor
(2) Crude fat (%)	Not less than 6.0 (not more than 2.0 for low-fat ice cream)	Not less than 2.0 (applicable only to ice milk)
(3) Bacterial count	Not more than 100,000 per milliliter of the melted sample (however, the lactic acid bacterial count shall be excluded for products containing lactic acid bacteria or fermented milk)	Not more than 50,000 per milliliter of a melted sample (however, the lactic acid bacterial count shall be excluded for products containing lactic acid bacteria or fermented milk)
(4) Coliforms	Not more than 10/ml	Not more than 10/ml
(5) Lactic acid bacterial count	Not less than the specified count (applicable only to products containing lactic acid bacteria)	Not less than the specified count (applicable only to products containing lactic acid bacteria)

3-3 Ice cream powder

1) Definition

Ice cream powder refers to a product that uses raw milk, dairy products, etc. as the main ingredients; is made by adding other food, food additives, etc. to the main ingredients, and then drying and powdering the ingredients; and is turned into a ice cream product when frozen.

2) Manufacturing and processing standards

- (1) If eggs are used, the surface of eggshells shall be cleaned and sterilized before broken.
- (2) Raw materials shall be homogenized before pasteurization and drying processes.
- (3) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarly cleaned and sterilized before and after use.
- (4) Pasteurization shall be conducted at 68.5 ° for 30 minutes or longer or in a method with the same or better effectiveness (however, it is possible not to conduct a pasteurization process for a product containing lactic acid bacteria if appropriate).
- (5) Products shall be sealed hermetically to prevent products absorbing moisture.

3) Content standards for main ingredients

(1) Definition

- <1> Milk fat: fat obtained from milk
- <2> Non-fat milk solid: milk solid that has the same ingredients as skim milk
- <3> Milk solid: the mixture of milk fat powder and non-fat milk solid

(2) Content standards

- <1> Ice cream powder
 - <A> Not less than 18% of milk fat
 - Not less than 48% of milk solid
- <2> Ice milk powder
 - <A> Not less than 6% of milk fat
 - Not less than 21% of milk solid
- <3> Sherbet powder
 - <A> Not less than 6% of non-fat milk solid
- <4> Non-fat ice cream powder
 - <A> Not less than 15% of crude fat

 Not less than 15% of non-fat milk solid

4) Specifications

- (1) Characteristics: shall have distinctive flavor and be free of foreign taste or odor.
- (2) Water content (%): not more than 5.0
- (3) Crude fat (%)
 - <1> Ice cream powder: not less than 18.0
 - <2> Ice milk powder: not less than 6.0
- (4) Bacterial count: not more than 50,000 per gram (excluding the lactic acid bacterial count for products containing lactic acid bacteria or fermented milk)
- (5) Coliforms: shall test negative.
- (6) Lactic acid bacterial count: not less than 3,000,000 per gram (applicable only to products containing lactic acid bacteria).

3-4 Ice cream mix

1) Definition

Ice cream mix refers to a product in a liquid state that uses raw milk, dairy products, etc. as the main ingredients; is made by adding other food, food additives, to the main ingredients and then pasteurizing or sterilizing the ingredients; and is turned into a ice cream product when frozen.

2) Manufacturing and processing standards

- (1) If eggs are used, the surface of eggshells shall be cleaned and sterilized before broken.
- (2) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (3) It is recommended that milk fat globules be homogenized to not larger than 2 microns in size in order to improve the texture of a product.
- (4) Pasteurization or sterilization shall be conducted in a method with the same or better effectiveness than the methods used for dairy products (however, it is possible not to conduct a pasteurization process for a product containing lactic acid bacteria if appropriate).
- (5) Care shall be taken to prevent contamination by microorganisms when other raw materials are added after the pasteurization process is completed.
- (6) Products shall be filled and packaged with automated machinery.

3) Content standards for main ingredients

(1) Definition

- <1> Milk fat: fat obtained from milk
- <2> Non-fat milk solid: milk solid that has the same ingredients as skim milk
- <3> Milk solid: the mixture of milk fat powder and non-fat milk solid

(2) Content standards

- <1> Ice cream mix
 - <A> Not less than 6% of milk fat
 - Not less than 16% of milk solid
- <2> Ice milk mix
 - <A> Not less than 2% of milk fat
 - Not less than 7% of milk solid
- <3> Sherbet mix
 - <A> Not less than 2% of non-fat milk solid
- <4> Low-fat ice cream mix
 - <A> Not more than 2% of crude fat
 - Not less than 10% of non-fat milk solid
- <5> Non-fat ice cream mix
 - <A> Not less than 5% of crude fat
 - Not less than 5% of non-fat milk solid

4) Specifications

Types Specifications	Ice cream mix, low-fat ice cream mix	Ice milk mix, sherbet mix, non-fat ice cream mix
(1) Characteristics	Shall have distinctive flavor and be free of foreign taste or odor	Shall have distinctive flavor and be free of foreign taste or odor
(2) Crude fat (%)	Not less than 6.0 (not more than 2.0 for low-fat ice cream mix)	Not less than 2.0 (applicable only to ice milk mix)
(3) Bacterial count	Not more than 100,000 per milliliter of the sample (however, sterilized products shall test negative and the lactic acid bacterial count shall be excluded for products containing lactic acid bacteria or fermented milk)	Not more than 50,000 per milliliter of the sample (however, sterilized products shall test negative and the lactic acid bacterial count shall be excluded for products containing lactic acid bacteria or fermented milk)
(4) Coliforms	Not more than 10/milliliter (however, sterilized products shall test negative)	Not more than 10/milliliter (however, sterilized products shall test negative)
(5) Lactic acid bacterial count	Not less than 10,000,000 per milliliter (applicable only to products containing lactic acid bacteria)	Not less than 10,000,000 per milliliter (applicable only to products containing lactic acid bacteria)

4. Dairy products

A dairy product refers to a product made by using raw milk or dairy products as the main ingredient and includes milk, low-fat milk, hydrolyzed lactose milk, processed milk, goat milk, fermented milk, buttermilk, condensed milk, milk cream, butter, natural cheese, processed cheese, milk powder, whey, lactose, a hydrolyzed milk protein product, etc.

4-1 Milk

1) Definition

Milk refers to a product made by pasteurizing or sterilizing raw milk or raw milk fortified with vitamins or minerals; aseptically adding lactic acid bacteria to pasteurized raw milk or vitamin or mineral fortified raw milk; or pasteurizing or sterilizing a product restored from a dairy product so as to have ingredients similar to raw milk.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (2) A product shall undergo a purification process to remove foreign materials and, if necessary, a homogenization process to make milk fat globules finer.
- (3) The addition of any fortifying agent to milk shall be done at an appropriate point in time in consideration of heat stability and contamination by microorganisms.
- (4) A pasteurized product shall be cooled below 10 ° immediately after pasteurization.
- (5) Filling of a pasteurized product shall be done through an automated packaging process to prevent secondary contamination by microorganisms, and a sterilized product shall be filled and packaged into a sterilized container or packaging through an aseptic process.
- (6) No other materials shall be mixed with milk. However, a product similar to raw milk may be added to restored milk, and vitamins or minerals, to fortified milk.

3) Content standards for main ingredients

(1) Definition

- <1> Milk: pasteurized or sterilized milk
- <2> Fortified milk: milk fortified with vitamins or minerals

- <3> Restored milk: a product restored from a dairy product so as to have ingredients similar to raw milk and then pasteurized or sterilized
- <4> Milk solid: having the same ingredient specifications as those of whole milk powder
- <5> Lactic acid bacteria added milk: milk added with lactic acid bacteria

(2) Content standards

- <1> Milk, fortified milk, lactic acid bacteria added milk: 100% of raw milk (excluding lactic acid bacteria and fortifying agents)
- <2> Restored milk: not less than 11% of dairy products (as milk solid)

4) Specifications

- (1) Characteristics: milky white ~ yellow liquid without foreign taste or odor
- (2) Specific gravity (15 °): 1.028~1.034
- (3) Acidity (%): not higher than 0.18 (as lactic acid)
- (4) Non-fat milk solid (%): not less than 8.0
- (5) Crude fat (%): not less than 3.0
- (6) Bacterial count: not more than 20,000 per milliliter (a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °. However, the lactic acid bacterial count is excluded for products containing lactic acid bacteria)
- (7) Coliforms: not more than 2 per milliliter (a sterilized product shall test negative)
- (8) Phosphatase: shall test negative (applicable only to a product pasteurized by a low-temperature method)
- (9) Lactic acid bacterial count: not less than 1,000,000 per milliliter (applicable only to products containing lactic acid bacteria).

4-2 Low-fat milk

1) Definition

Low-fat milk refers to raw milk from which milk fat is partially removed, low-fat milk fortified with vitamins or minerals or added aseptically with lactic acid bacteria after pasteurized, or a pasteurized or sterilized low-fat product restored from dairy products.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (2) A product shall undergo a purification process to remove foreign materials and, if necessary, a homogenization process to make milk fat globules finer.
- (3) The addition of any fortifying agent to milk shall be done at an appropriate point in time in consideration of heat stability and contamination by microorganisms.
- (4) Pasteurization or sterilization shall be conducted by the low-temperature long-time (at 63~65 ° for 30 minutes), high-temperature short-time (at 72~75 ° for 15~20 seconds), or ultrahigh-temperature flash (at 130~150 ° for 0.5~5 seconds) pasteurization method or by a method with the same or better effectiveness.
- (5) A pasteurized product shall be cooled below 10 ° immediately after pasteurization.
- (6) Filling of a pasteurized product shall be done through an automated packaging process to prevent secondary contamination by microorganisms, and a sterilized product shall be filled and packaged into a sterilized container or packaging through an aseptic process.
- (7) No other materials shall be mixed with low-fat milk. However, a product similar to raw milk may be added to restored low-fat milk; vitamins or minerals, to fortified low-fat milk; and lactic acid bacteria, to lactic acid bacteria added low-fat milk.

3) Content standards for main ingredients

(1) Definition

<1> Low-fat milk

Raw milk whose milk fat content is controlled below 2%

<2> Restored low-fat milk

A product restored from dairy products so as to be similar to low-fat milk

<3> Fortified low-fat milk

Low-fat milk fortified with vitamins or minerals

<4> Non-fat milk solid

Milk solid having the same ingredient specifications as those for skim milk powder

<5> Restored fortified low-fat milk

A product restored from dairy products so as to be similar to low-fat milk and fortified with vitamins or minerals

<6> Lactic acid bacteria added low-fat milk

Low-fat milk added with lactic acid bacteria

(2) Content standards

<1> Low-fat milk, fortified low-fat milk, lactic acid bacteria added low-fat milk: not less than 100% of raw milk (excluding fortifying agents and added lactic acid bacteria).

<2> Restored low-fat milk, restored fortified low-fat milk: not less than 8% of dairy products (as non-fat milk solid)

4) Specifications

(1) Characteristics: milky white ~ yellow liquid without foreign taste or odor

(2) Specific gravity (15 °): 1.030~1.045

(3) Acidity (%): not higher than 0.18 (as lactic acid)

(4) Crude fat (%): not more than 2.0

(5) Non-fat milk solid (%): not less than 8.0

(6) Bacterial count: not more than 20,000 per milliliter (a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °. However, the lactic acid bacterial count is excluded for products containing lactic acid bacteria)

(7) Coliforms: not more than 2 per milliliter (a sterilized product shall test negative)

(8) Phosphatase: shall test negative (applicable only to a product pasteurized by a low-temperature method)

(9) Lactic acid bacterial count: not less than 1,000,000 per milliliter (applicable only to products containing lactic acid bacteria)

4-3 Hydrolyzed lactose milk

1) Definition

Hydrolyzed lactose milk refers to raw milk, milk or low-fat milk which is pasteurized or sterilized after lactose is hydrolyzed with lactase.

2) Manufacturing and processing standards

(1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.

(2) A product shall undergo a purification process to remove foreign materials and, if necessary, a homogenization process to make milk fat globules finer.

(3) The amount of the enzyme used and the process shall be controlled carefully to ensure that lactose be sufficiently hydrolyzed.

(4) Pasteurization or sterilization shall be conducted by the low-temperature long-time (at 63~65 ° for 30 minutes), high-temperature short-time (at 72~75 ° for 15~20 seconds), or ultrahigh-temperature flash (at 130~150 ° for 0.5~5 seconds) pasteurization method or by a method with the same or better effectiveness.

(5) A pasteurized product shall be cooled below 10 ° immediately after pasteurization.

(6) Filling of a pasteurized product shall be done through an automated packaging process to prevent secondary contamination by microorganisms, and a sterilized product shall be filled and packaged into a sterilized container or packaging through an aseptic process.

3) Content standards for main ingredients

(1) Definition

<1> Hydrolyzed lactose milk: pasteurized or sterilized raw milk in which lactose is hydrolyzed

<2> Low-fat hydrolyzed lactose milk: pasteurized or sterilized raw milk in which lactose is hydrolyzed and the milk fat content is lowered below 2%.

(2) Content standards

100% of raw milk, milk, or low-fat milk

4) Specifications

(1) Characteristics: milky white or yellow homogenized liquid without foreign taste or odor

(2) Acidity (%): not higher than 0.18 (as lactic acid)

(3) Lactose (%): not more than 1.0

(4) Crude fat (%): not more than 3.0 (not more than 2.0 for low-fat hydrolyzed lactose milk)

(5) Bacterial count: not more than 20,000 per milliliter (a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °.)

(6) Coliforms: not more than 2 per milliliter (a sterilized product shall test negative)

4-4 Processed milk

1) Definition

Processed milk refers to a product that uses raw milk or a dairy product as the main ingredient, and is made by adding other food, food additives to the main ingredient and pasteurizing or sterilizing the ingredients.

2) Manufacturing and processing standards

(1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.

(2) If other raw materials such as fruit, vegetable, etc. are used, care shall be taken to prevent contamination by microorganisms.

(3) Pasteurization or sterilization shall be conducted by the low-temperature long-time (at 63~65 ° for 30 minutes), high-temperature short-time (at 72~75 ° for 15~20 seconds), or ultrahigh-temperature flash (at 130~150 ° for 0.5~5 seconds) pasteurization method or by a method with the same or better effectiveness.

(4) A product shall undergo a purification process to remove foreign materials and, if necessary, a homogenization process to make milk fat globules finer.

(5) A pasteurized product shall be cooled below 10 ° immediately after pasteurization.

(6) Filling of a pasteurized product shall be done through an automated packaging process to prevent secondary contamination by microorganisms, and a sterilized product shall be filled and packaged into a sterilized container or packaging through an aseptic process.

3) Content standards for main ingredients

(1) Definition

<1> Non-fat milk solid: milk solid having the same ingredient specifications as those for skim milk powder

<2> Milk beverages: beverages containing not less than 4% of non-fat milk solid and not classified as other dairy products

(2) Content standards

Not less than 4% of raw milk or dairy products (as non-fat milk solid)

4) Specifications

Types Specifications	Processed milk	Low-fat processed milk	Milk beverages
(1) Characteristics	Liquid having distinctive color and flavor, and free of foreign taste or odor	Liquid having distinctive color and flavor, and free of foreign taste or odor	Liquid having distinctive color and flavor, and free of foreign taste or odor
(2) Non-fat milk solid (%)	Not less than 7.2	Not less than 5.5	--
(3) Crude fat (%)	Not less than 2.7	Not more than 2.0	--
(4) Bacterial count	Not more than 20,000 per milliliter (however, a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °)	Not more than 20,000 per milliliter (however, a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °)	Not more than 20,000 per milliliter (however, a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °)
(5) Coliforms	Not more than 2 per milliliter (however, sterilized products shall test negative)	Not more than 2 per milliliter (however, sterilized products shall test negative)	Not more than 2 per milliliter (however, sterilized products shall test negative)

4-5 Goat milk

1) Definition

Goat milk refers to pasteurized or sterilized raw milk obtained from goat.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (2) A product shall undergo a purification process to remove foreign materials and, if necessary, a homogenization process to make milk fat globules finer.
- (3) Pasteurization or sterilization shall be conducted by the low-temperature long-time (at 63~65 ° for 30 minutes), high-temperature short-time (at 72~75 ° for 15~20 seconds), or ultrahigh-temperature flash (at 130~150 ° for 0.5~5 seconds) pasteurization method or by a method with the same or better effectiveness.
- (4) A pasteurized product shall be cooled below 10 ° immediately after pasteurization.
- (5) Filling of a pasteurized product shall be done through an automated packaging process to prevent secondary contamination by microorganisms, and a sterilized product shall be filled and packaged into a sterilized container or packaging through an aseptic process.

3) Content standards for main ingredients

100% of raw goat milk

4) Specifications

- (1) Characteristics: milky white ~ yellow homogenized liquid without foreign taste or odor
- (2) Specific gravity (15 °): 1.030~1.034
- (3) Acidity (%): not higher than 0.20 (as lactic acid)
- (4) Non-fat milk solid (%): not less than 8.0

- (5) Crude fat (%): not less than 3.6
- (6) Bacterial count: not more than 20,000 per milliliter (A sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °.)
- (7) Coliforms: not more than 2/ml (A sterilized product shall test negative.)
- (8) Phosphatase: shall test negative (applicable only to a product pasteurized by a low-temperature method)

4-6 Fermented milk

1) Definition

Fermented milk refers to raw milk or a dairy product fermented with lactic acid bacteria or yeast.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (2) Care shall be taken to prevent mixed raw materials from being contaminated by foreign microorganisms after sterilization and cooling processes are completed.
- (3) Appropriate temperatures shall be maintained for the culturing and fermentation of lactic acid bacteria or yeast.
- (4) Fermentation and packaging shall be done through automated processes to prevent contamination by microorganisms, foreign materials, etc.
- (5) Fermented milk products may go through a cooling process.

3) Content standards for main ingredients

(1) Definition

- <1> Fermented milk, thickened fermented milk, creamy fermented milk, thickened creamy fermented milk: fermented raw milk or a dairy product
- <2> Fermented buttermilk: fermented buttermilk or skim milk
- <3> Frozen fermented milk: fermented milk that is frozen

(2) Content standards

- <1> Fermented milk: not less than 3 % of raw milk or a dairy product (as non-fat milk solid)
- <2> Thickened fermented milk: not less than 8% of raw milk or a dairy product (as non-fat milk solid)
- <3> Fermented buttermilk: not less than 8% of buttermilk or skim milk (as non-fat milk solid)
- <4> Creamy fermented milk
 - <A> Not less than 3% of raw milk or a dairy product (as non-fat milk solid)
 - Not less than 8% of milk fat
- <5> Thickened creamy fermented milk
 - <A> Not less than 8% of raw milk or a dairy product (as non-fat milk solid)
 - Not less than 8% of milk fat

4) Specifications

Types Specifications	Fermented milk	Thickened fermented milk	Creamy fermented milk	Thickened creamy fermented milk	Fermented buttermilk
(1) Characteristics	Liquid having distinctive color & flavor, and free of foreign taste or odor	Liquid having distinctive color & flavor, and free of foreign taste or odor	Liquid having distinctive color & flavor, and free of foreign taste or odor	Liquid having distinctive color & flavor, and free of foreign taste or odor	Liquid having distinctive color & flavor, and free of foreign taste or odor

(2) Non-fat milk solid (%)	Not less than 3.0	Not less than 8.0	Not less than 3.0	Not less than 8.0	Not less than 8.0
(3) Crude fat (%)	--	--	Not less than 8.0	Not less than 8.0	Not more than 1.5
(4) Lactic acid bacterial count or yeast count	Not less than 10,000,000 per milliliter	Not less than 100,000,000 per milliliter (not less than 10,000,000 for frozen products)	Not less than 10,000,000 per milliliter	Not less than 100,000,000 per milliliter (not less than 10,000,000 for frozen products)	Not less than 10,000,000 per milliliter
(5) Coliforms	Shall test negative	Shall test negative	Shall test negative	Shall test negative	Shall test negative

4-7 Buttermilk

1) Definition

Buttermilk refers to a product made by pasteurizing or sterilizing what remains after butter is manufactured from milk cream or a product made by powdering the above-said product.

2) Manufacturing and processing standards

(1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.

(2) Pasteurization or sterilization shall be conducted by the low-temperature long-time (at 63~65 ° for 30 minutes), high-temperature short-time (at 72~75 ° for 15~20 seconds), or ultrahigh-temperature flash (at 130~150 ° for 0.5~5 seconds) pasteurization method or by a method with the same or better effectiveness.

(3) Filling of a pasteurized product shall be done through an automated packaging process to prevent secondary contamination by microorganisms, and a sterilized product shall be filled and packaged into a sterilized container or packaging through an aseptic process.

(4) Food additives shall not be used during manufacturing or processing.

3) Content standards for main ingredients

100% of raw buttermilk

4) Specifications

Types Specifications	Buttermilk	Powdered buttermilk
(1) Characteristics	Shall have distinctive color and flavor and be free of foreign taste or odor	Shall have distinctive color and flavor and be free of foreign taste or odor
(2) Water content (%)	--	Not more than 5.0
(3) Milk solid (%)	Not less than 6.5	Not less than 95.0
(4) Bacterial count	Not more than 20,000 per milliliter (however, a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °)	Not more than 20,000 per gram
(4) Coliforms	Not more than 2 per milliliter (however, sterilized products shall test negative)	Shall test negative

4-8 Concentrated milk

1) Definition

Concentrated milk refers to a product made by concentrating raw milk or low-fat milk alone or added with saccharide (sugar, glucose, fructose).

2) Manufacturing and processing standards

(1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.

(2) The concentration process shall be conducted in a way to minimize the loss of nutrients.

(3) When lactose is used to prevent precipitation, it should be processed into fine powder in a way to prevent contamination by microorganisms.

(4) Filling of a pasteurized product shall be done through an automated packaging process to prevent secondary contamination by microorganisms, and a sterilized product shall be filled and packaged into a sterilized container or packaging through an aseptic process.

(5) No other materials shall be added to concentrated milk except for sweetened condensed milk or sweetened condensed skim milk, to which saccharide (sugar, glucose, fructose) may be added.

(6) Food additives shall not be used during manufacturing or processing.

3) Content standards for main ingredients

(1) Definition

<1> Concentrated milk: a product made by concentrating raw milk alone

<2> Concentrated skim milk: a product made by concentrating raw milk whose milk fat is controlled below 0.5%

<3> Sweetened condensed milk: a product made by concentrating raw milk added with saccharide

<4> Sweetened condensed skim milk: a product made by concentrating raw milk after controlling milk fat below 0.5% and adding saccharide

(2) Content standards

<1> Concentrated milk, concentrated skim milk: 100% of raw milk or skim milk

<2> Sweetened condensed milk, sweetened condensed skim milk: 100% of raw milk or skim milk (excluding the amount of added saccharide)

4) Specifications

Types Specifications	Concentrated milk, concentrated skim milk	Sweetened condensed milk	Sweetened condensed skim milk
(1) Characteristics	Homogenized milk white ~ yellow liquid free of foreign taste or odor	Homogenized and sweet milk white ~ yellow liquid free of foreign taste or odor	Homogenized and sweet milk white ~ yellow liquid free of foreign taste or odor
(2) Water content (%)	--	Not more than 27.0	Not more than 29.0
(3) Milk solid (%)	Not less than 22.0	Not less than 29.0	Not less than 25.0
(4) Crude fat (%)	Not less than 6.0 (applicable only to concentrated milk)	Not less than 8.0	--
(5) Acidity (%)	Not more than 0.4 (using lactic acid as the basis and applicable only to concentrated milk)	--	--
(6) Sugar content	--	Not more than 58.0	Not more than 58.0

(including lactose, %)			
(7) Bacterial count	Not more than 20,000 per gram (however, a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °)	Not more than 20,000 per gram	Not more than 20,000 per gram
(8) Coliforms	Not more than 2 per milliliter (however, sterilized products shall test negative)	Shall test negative	Shall test negative

4-9 Milk cream

1) Definition

Milk cream refers to a product made by pasteurizing or sterilizing milk fat isolated from raw milk or milk, or milk fat added with food, food additives, etc. or a product made by powdering the above-said product.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (2) Raw milk shall undergo a purification process to remove foreign materials.
- (3) A centrifuge used to separate milk fat shall be cleaned thoroughly before and after use to sufficiently remove contaminants.
- (4) Pasteurization or sterilization shall be conducted by the low-temperature long-time (at 63~65 ° for 30 minutes), high-temperature short-time (at 72~75 ° for 15~20 seconds), or ultrahigh-temperature flash (at 130~150 ° for 0.5~5 seconds) pasteurization method or by a method with the same or better effectiveness.
- (5) Filling of a pasteurized product shall be done through an automated packaging process to prevent secondary contamination by microorganisms, and a sterilized product shall be filled and packaged into a sterilized container or packaging through an aseptic process.
- (6) No other materials shall be added to milk cream (with the exception of processed milk cream, powdered milk cream).

3) Content standards for main ingredients

(1) Definition

- <1> Milk cream: milk fat separated from raw milk or milk
- <2> Processed milk cream: a product made by processing milk cream added with food, food additives, etc.
- <3> Powdered milk cream: a product made by powdering milk cream added with food, food additives, etc.

(2) Content standards

- <1> Milk cream: not less than 30% of milk fat
- <2> Processed milk cream: not less than 18% of milk fat
- <3> Powdered milk cream: not less than 50% of milk fat

4) Specifications

Types Specifications	Milk cream	Processed milk cream	Powdered milk cream
(1) Characteristics	Homogenized milk white ~ yellow liquid or semi solid free of foreign taste or odor	Shall have distinctive color & flavor and be free of foreign tastes/odors	Powder having distinctive color & flavor and be free of foreign taste or odor
(2) Water content (%)	--	--	Not more than 5.0
(3) Acidity (%)	Not more than 0.20 (using lactic acid as the basis)	--	--
(4) Crude fat (%)	Not less than 30.0	Not less than 18.0	Not less than 50.0
(5) Bacterial count	Not more than 20,000 per gram	Not more than 20,000 per gram (however, a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °)	Not more than 20,000 per gram
(6) Coliforms	Not more than 2 per gram	Not more than 2 per gram (however, sterilized products shall test negative)	Shall test negative

4-10 Butter

1) Definition

Butter refers to a product made by separating or fermenting milk fat of raw milk and then agitating and working such milk fat alone or added with food, food additives, etc.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (2) Raw milk shall undergo a purification process to remove foreign materials.
- (3) A centrifuge used to separate milk fat shall be cleaned thoroughly before and after use to sufficiently remove contaminants.
- (4) Cooling water used to clean butter particles shall meet the quality standards for drinking water.
- (5) When salt is used, purified salt shall be used.
- (6) When fermented butter is manufactured, care shall be taken to prevent contamination by foreign microorganisms.
- (7) The temperature and timing of agitation shall be controlled carefully to achieve the desired texture and water content.

3) Content standards for main ingredients

(1) Definition

<1> Butter

A product made by agitating and working milk fat separated from raw milk

<2> Processed butter

A product made by agitating and working milk fat separated from raw milk and added with

food or food additives.

(2) Content standards

<1> Butter: not less than 80% of milk fat

<2> Processed butter: not less than 50% of milk fat

4) Specifications

Types Specifications	Butter	Processed butter
(1) Characteristics	Shall have distinctive color and flavor and be free of foreign taste or odor	Shall have distinctive color and flavor and be free of foreign taste or odor
(2) Water content (%)	Not more than 18.0	Not more than 18.0
(3) Acid value	Not higher than 2.8	Not higher than 2.8
(4) Crude fat (%)	Not less than 18.0	Not less than 50.0
(5) Butyric spores	20.0+/-2	--
(6) Tar colors	Shall not be detected	Shall not be detected
(7) Coliforms	Shall test negative	Shall test negative
(8) Antioxidants (g/kg): antioxidants not listed below shall not be detected.		
Butylated hydroxy anisole(BHA) Butylated hydroxy toluene(BHT) tert-Butylhydroquinone (TBHQ) Propyl gallate (PG)	Not more than 0.2 (when used together, the aggregate quantity of BHA, BHT, and TBHQ shall be not more than 0.2) Not more than 0.1	
(8) Preservatives (g/kg): preservatives not listed below shall not be detected.		
Dehydroacetic acid Sodium dehydroacetate	Not more than 0.5 (using dehydroacetic acid as the basis)	

4-11 Natural cheese

1) Definition

Natural cheese refers to a product made by coagulating raw milk or a dairy product with lactic acid bacteria, protein coagulating enzymes, organic acids, etc., and then removing whey.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (2) Raw milk shall undergo a purification process to remove foreign materials.
- (3) Raw milk or a dairy product to be used for the manufacturing of cheese shall be pasteurized at 60~65 ° for 30 minutes, at 72~75 ° for 15 seconds or longer, or by a method with the same or better effectiveness.
- (4) When lactic acid bacteria are added, care shall be taken to prevent secondary contamination by foreign microorganisms and acidity and timing shall be carefully controlled.
- (5) Curd that is formed in the process shall be cut into appropriate sizes so that whey may be separated easily.
- (6) During fermentation or ripening, the temperature and humidity in the ripening room shall be carefully controlled to prevent the surface of the product being contaminated by hazardous microorganisms.

3) Content standards for main ingredients

100% of raw milk or a dairy product

4) Specifications

- (1) Characteristics: shall have distinctive color and flavor and be free of foreign taste or odor.
- (2) Coliforms: shall test negative (as for green cheese, not more than 2 per gram)
- (3) Clostridia: shall test negative (applicable only to hard and semi-hard cheese)

(4) Milk solid and milk fat

Types	Fat content	Milk solid (%)	Milk fat (%)
Hard cheese	High	Not less than 62.0	Not less than 31.0
	Medium	Not less than 60.0	Not less than 24.0
Semi-hard cheese	High	Not less than 57.0	Not less than 28.5
	Medium	Not less than 53.0	Not less than 21.2
	Low	Not less than 40.0	Not less than 9.8
Soft cheese	High	Not less than 46.0	Not less than 23.0
	Medium	Not less than 42.0	Not less than 16.8
	Low	Not less than 35.0	Not less than 7.0
Green cheese	High	Not less than 24.0	Not less than 12.0
	Medium	Not less than 22.0	Not less than 8.8
	Low	Not less than 20.0	Not less than 4.0
	Skim	Not less than 18.0	Not less than 3.6

(5) Preservatives (g/kg): the preservatives not specified below shall not be detected:

Dehydroacetic acid Sodium dehydroacetate	Not more than 0.5 (using dehydroacetic acid as the basis)
Sorbic acid Potassium sorbate	Not more than 3.0 (using sorbic acid as the basis, and when used together with calcium propionate or sodium propionate, the aggregate of sorbic acid and propionic acid shall be no more than 3.0)
Calcium propionate Sodium propionate	Not more than 3.0 (using propionic acid as the basis, and when used together with sorbic acid or potassium sorbate, the aggregate of propionic acid and sorbic acid shall be no more than 3.0)

4-12 Processed cheese

1) Definition

Processed cheese refers to a product that uses natural cheese as the main ingredient, is made by adding other food, food additives, etc. to the main ingredient and emulsifying the ingredients, and is not classified as natural cheese.

2) Manufacturing and processing standards

- (1) Mold and other foreign materials shall be removed from the surface before pulverized.
- (2) If fruit, vegetable, etc. is added, it shall be washed clean and uneatable parts shall be removed.
- (3) Natural cheese shall be sufficiently agitated and emulsified after pulverization so as to have homogeneous texture.
- (4) Hard processed cheese shall be manufactured in a way that the content of a dairy product other than cheese used as a raw material does not exceed 10%.
- (5) After emulsification and pasteurization, cheese mix shall be filled and packaged as quickly as possible so as to prevent secondary contamination.
- (6) When a preservative is added, caution shall be taken not to exceed standards in consideration of the quantity of preservatives derived from natural cheese.
- (7) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.

3) Content standards for main ingredients

Not less than 50% of the total milk solid content shall be milk solid derived from natural cheese.

4) Specifications

- (1) Characteristics: shall have distinctive color and flavor, and be free of foreign taste or odor.

(2) Coliforms: shall test negative

(3) Milk solid and milk fat

Types	Milk solid (%)	Milk fat (%)
Hard processed cheese	Not less than 50.0	Not less than 25.0
Semi-hard processed cheese	Not less than 46.0	Not less than 18.4
Mixed processed cheese	Not less than 38.0	Not less than 7.6
Soft processed cheese	Not less than 34.0	Not less than 6.8

(5) Preservatives (g/kg): the preservatives not specified below shall not be detected:

Dehydroacetic acid Sodium dehydroacetate	Not more than 0.5 (using dehydroacetic acid as the basis)
Sorbic acid Potassium sorbate	Not more than 3.0 (using sorbic acid as the basis, and when used together with calcium propionate or sodium propionate, the aggregate of sorbic acid and propionic acid shall be no more than 3.0)
Calcium propionate Sodium propionate	Not more than 3.0 (using propionic acid as the basis, and when used together with sorbic acid or potassium sorbate, the aggregate of propionic acid and sorbic acid shall be no more than 3.0)

4-13 Milk powder

1) Definition

Milk powder refers to a powdery product made by processing raw milk or skim milk alone or added with food, food additives, etc.

2) Manufacturing and processing standards

(1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.

(2) Raw milk shall undergo a purification process to remove foreign materials.

(3) Pasteurization or sterilization shall be conducted by the low-temperature long-time (at 63~65 ° for 30 minutes), high-temperature short-time (at 72~75 ° for 15~20 seconds), or ultrahigh-temperature flash (at 130~150 ° for 0.5~5 seconds) pasteurization method or by a method with the same or better effectiveness.

(4) Concentration and powdering processes shall be conducted in a way to minimize the loss of nutrients.

(5) Dried products shall be quickly sealed and packaged hermetically to prevent the absorption of moisture and contamination.

(6) No other materials shall be added to milk powder other than mixed milk powder. However, saccharide (sugar, glucose, fructose) may be added to sweetened milk powder.

3) Content standards for main ingredients

(1) Definition

<1> Whole milk powder

A product made by removing water from and powdering raw milk

<2> Skim milk powder

A product made by removing water from and powdering skim milk

<3> Sweetened milk powder

A product made by powdering raw milk added with saccharide (sugar, glucose, fructose)

<4> Mixed milk powder

A powdery product made by adding food or food additives such as grains, grain products, cocoa products, whey, and whey powder to raw milk, whole milk powder, skim milk, or skim milk powder

(2) Content standards

- <1> Whole milk powder: 100% of raw milk or skim milk
- <2> Sweetened milk powder: 100% of raw milk (excluding the amount of added saccharide)
- <3> Mixed milk powder: not less than 50% of raw milk, whole milk powder, skim milk, or skim milk powder (as milk solid)

4) Specifications

Types Specifications	Whole milk powder	Skim milk powder	Sweetened milk powder	Mixed milk powder
(1) Characteristics	Fine light yellow powder free of foreign taste or odor	Fine light yellow powder free of foreign taste or odor	Fine light yellow powder free of foreign taste or odor	Shall have distinctive color and flavor and be free of foreign taste or odor
(2) Water content (%)	Not more than 5.0	Not more than 5.0	Not more than 5.0	Not more than 5.0
(3) Milk solid (%)	Not less than 95.0	Not less than 95.0	Not less than 70.0	Not less than 50.0
(4) Crude fat (%)	Not less than 25.0	Not more than 1.3	Not less than 18.0	Not less than 12.0 (not applicable to products using skim powder milk as a raw material)
(5) Sugar content (excluding lactose, %)	--		Not more than 25.0	--
(6) Bacterial count	Not more than 20,000 per gram	Not more than 20,000 per gram	Not more than 20,000 per gram	Not more than 20,000 per gram
(7) Coliforms	Shall test negative	Shall test negative	Shall test negative	Shall test negative

4-12 Whey

1) Definition

Whey refers to a product made by pasteurizing, concentrating or powdering raw whey, which remains after cheese is manufactured.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarly cleaned and sterilized before and after use.
- (2) Pasteurization or sterilization shall be conducted by the low-temperature long-time (at 63~65 ° for 30 minutes), high-temperature short-time (at 72~75 ° for 15~20 seconds), or ultrahigh-temperature flash (at 130~150 ° for 0.5~5 seconds) pasteurization method or by a method with the same or better effectiveness.
- (3) Concentration and drying processes shall be conducted in a way to minimize the loss of nutrients.
- (4) Products shall be filled and packaged sanitarly after drying.

3) Content standards for main ingredients

100% of raw whey

4) Specifications

Types Specifications	Whey	Concentrated whey	Whey powder
(1) Characteristics	Liquid with distinctive color & flavor and free of foreign taste or odor	Liquid with distinctive color & flavor and free of foreign taste or odor	Powder with distinctive color & flavor and free of foreign taste or odor
(2) Water content (%)	--	--	Not more than 5.0
(3) Milk solid (%)	Not less than 5.0	Not less than 25.0	Not less than 95.0
(4) Bacterial count	Not more than 20,000 per milliliter (however, a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °)	Not more than 20,000 per gram (however, a sterilized product shall be negative when tested according to the standard platinum loop method after being stored for 1 week at 55 ° or 2 weeks at 37 °)	Not more than 20,000 per gram
(5) Coliforms	Not more than 2 per milliliter (however, sterilized products shall test negative)	Not more than 2 per gram (however, sterilized products shall test negative)	Shall test negative

4-15 Lactose

1) Definition

Lactose refers to a product made by powdering carbohydrate separated from skim milk or whey.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (2) Protein, milk fat, and other non-carbohydrate ingredients shall be sufficiently removed with heat at a high temperature or using coagulants.
- (3) Salts shall be removed as much as possible through an ion exchange process before powdering.
- (4) Dried products shall be sealed and packaged as quickly as possible to prevent moisture absorption, etc.

3) Content standards for main ingredients

100% of raw milk or a dairy product

4) Specifications

- (1) Characteristics: powder having distinctive color and flavor, and free of foreign taste or odor
- (2) Water content (%): not more than 5.0
- (3) Lactose (%): not less than 95.0
- (4) Bacterial count: not more than 20,000 per gram
- (5) Coliforms: shall test negative

4-16 Hydrolyzed milk protein products

1) Definition

A hydrolyzed milk protein product refers to a product made by processing milk acid or enzyme-hydrolyzed milk protein to be suitable for eating or mixing such hydrolyzed milk protein with food or food additives.

2) Manufacturing and processing standards

- (1) During hydrolysis, an appropriate amount of acid or enzyme shall be used and if acid is used for hydrolysis, it shall be removed or neutralized after use.
- (2) Only hydrochloric acid may be used for acid-hydrolysis.
- (3) Before the manufacture of a final product, an adequate pasteurization or sterilization process shall be conducted.

3) Content standards for main ingredients

- (1) Definition
 - <1> Milk protein hydrolysate
A product made by hydrolyzing and processing milk protein to be suitable for eating
 - <2> Milk protein hydrolysate product
A product that uses milk protein hydrolysate as the main ingredient and is manufactured so as to be used in the manufacture and processing of food
- (2) Content standards
 - <1> Milk protein hydrolysate
100% of milk protein hydrolysate
 - <2> Milk protein hydrolysate product
In accordance with the content standards of individual business entities

4) Specifications

- (1) Characteristics: shall have distinctive color and flavor and be free of foreign taste or odor.
- (2) Water content (%): not more than 5.0
- (3) Crude protein (%): not less than the content specified in the label
- (4) Amino nitrogen (%): not less than the content specified in the label
- (5) Casein phosphopeptide (C.P.P.) (%): not less than the specified content if the content is specified (applicable only to milk protein hydrolysate)
- (6) Bacterial count: not more than 20,000 per gram
- (7) Coliforms: shall test negative

12. Special nutritional products

A special nutritional product refers to a product made by adding or reducing nutrients to or from food ingredients so as to be provided for babies and infants, sick people, aged or unhealthy people, overweight people, pregnant women, or other people who need special dietary care or so as to be substituted for meal; or by mixing nutrients with food so as to provide nutrients that may not be sufficiently provided by ordinary diet; and includes baby formula, follow-up formula, baby and infant grain formula, miscellaneous baby and infant formula, nutrient supplement product, food for patients, etc., and meal substitute.

12-1 Milk formula

1) Definition

Milk formula refers to a product that uses raw milk or a dairy product as the main ingredient and is made by adding minerals, vitamins, or other nutrients necessary to help the development and growth of babies or infants and processing the ingredients so as to be similar to breast milk.

2) Manufacturing and processing standards

- (1) Equipment or utensils in direct contact with raw materials shall be of easy-to-clean and anti-corrosive material and shall be sanitarily cleaned and sterilized before and after use.
- (2) Raw goat milk and goat milk shall not be used as an ingredient.
- (3) Raw milk shall undergo a purification process to remove foreign materials and a homogenization process to make milk fat globules finer.
- (4) Pasteurization or sterilization shall be conducted by the low-temperature long-time (at 63~65 ° for 30 minutes), high-temperature short-time (at 72~75 ° for 15~20 seconds), or

ultrahigh-temperature flash (at 130~150 ° for 0.5~5 seconds) pasteurization method or by a method with the same or better effects.

- (5) When vitamins, which are easily destroyed by heat, or minerals, which are not easily dissolved, are added to the solution before pasteurization, an adequate method shall be employed in consideration of the destruction rate of vitamins and the dissolvability of minerals.
- (6) Added vitamins, minerals, or other nutrients shall be mixed homogeneously in a product.
- (7) For milk formula and follow-up milk formula, dried powder shall be added with exact quantities of vitamins, minerals, etc. if such nutrients are added, then sterilized, homogenized, cooled, and packaged aseptically.
- (8) Milk formula powder and follow-up milk formula powder shall be filled and packaged with nitrogen gas through an automated packaging process.
- (9) Other ingredients may be added to provide nutrients found in breast milk or to make a product suitable as the single source of nutrients for babies or infants, provided that the usefulness of such nutrients has been proven scientifically, and the amounts to be added shall be on the basis of the quantities in breast milk.
- (10) Milk formula shall not be irradiated.
- (11) Products for babies and infants with a metabolic disorder related to or allergic to milk ingredients may be manufactured and processed exempt from the application of the standards concerning milk ingredients in 4) content standards for main ingredients and 5) specifications hereafter.

3) Content standards for main ingredients

(1) Definition

- <1> Milk formula powder: a powdery breast milk substitute that uses raw milk or dairy products as the main ingredient and is manufactured and processed so as to have ingredients similar to those of breast milk
- <2> Milk formula: a liquid breast milk substitute that uses raw milk or a dairy product as the main ingredient and is manufactured and processed so as to have ingredients similar to those of breast milk
- <3> Follow-up milk formula: a product made for babies and infants aged 7 months or older
- <4> Milk ingredients: ingredients other than water obtained from milk
- <5> Prematurely born babies or premature babies: Babies born after a gestation period of between 28 months and 38 months or babies weighing 2.5 kg or lighter at birth

(2) Content standards

- <1> Milk formula powder, follow-up milk formula powder
Not less than 60% of milk ingredients (as solid)
- <2> Milk formula, follow-up milk formula
Not less than 9.0% of milk ingredients (as solid)
- <3> The addition or reduction of nutrients shall be in accordance with the content standards of individual business entities established in consideration of the Recommended Daily Nutritional Values for Koreans (Chapter 9, item 10 of the Attachment) or CODEX recommendations.

4) Specifications

Specifications \ Types	Milk formula powder, milk formula	Follow-up milk formula powder, follow-up milk formula
(1) Characteristics	Shall have distinctive color and flavor and be free of foreign taste or odor	Shall have distinctive color and flavor and be free of foreign taste or odor
(2) Water content (%)	Not more than 5.0 (not applicable to liquid products)	Not more than 5.0 (not applicable to liquid products)

(3) Crude protein (%)	9.0~20.0	12.0~27.5
(4) Crude fat (%)	15.0~30.0 (Linoleic acid shall be not less than 9.0% of the crude fat content)	15.0~30.0 (Linoleic acid shall be not less than 9.0% of the crude fat content)
(5) Milk ingredients (%)	Not less than 60.0	Not less than 60.0
(6) Vitamin A (IU/100g)	1,250~2,500	1,250~3,750
(7) Vitamin D (IU/100g)	200~400	200~600
(8) Vitamin C (mg/100g)	Not less than 40	Not less than 40
(9) Vitamin B ₁ (mg/100g)	Not less than 0.20	Not less than 0.20
(10) Vitamin B ₂ (mg/100g)	Not less than 0.30	Not less than 0.30
(11) Nicotinic acid (µg/100g)	Not less than 1,250	Not less than 1,250
(12) Vitamin B ₆ (µg/100g)	Not less than 175	Not less than 225
(13) Folic acid (µg/100g)	Not less than 20	Not less than 20
(14) Pantothenic acid (µg/100g)	Not less than 1,500	Not less than 1,500
(15) Vitamin B ₁₂ (µg/100g)	Not less than 0.5	Not less than 0.75
(16) Vitamin K ₁ (µg/100g)	Not less than 20	Not less than 20
(17) Vitamin E (IU/100g)	Not less than 3.5	Not less than 3.5
(18) Sodium (mg/100g)	100~300	100~425
(19) Potassium (mg/100g)	400~1,000	Not less than 400
(20) Chloride (mg/100g)	275~750	Not less than 275
(21) Calcium (mg/100g)	Not less than 250	Not less than 450
(22) Phosphorus (mg/100g)	Not less than 125	Not less than 300
(23) Magnesium (mg/100g)	Not less than 30.0	Not less than 30.0
(24) Iron (mg/100g)	Not less than 5.0	5.0~10.0
(25) Iodine (µg/100g)	Not less than 25	Not less than 25
(26) Copper (µg/100g)	Not less than 300	--
(27) Zinc (mg/100g)	Not less than 2.5	Not less than 2.5
(28) Manganese (µg/100g)	Not less than 25	Not less than 25
(29) Artificial sweeteners	Shall not be detected	Shall not be detected
(30) Tar colors	Shall not be detected	Shall not be detected
(31) Bacterial count	Not more than 20,000/g (shall test negative for milk formula)	Not more than 20,000/g (shall test negative for follow-up milk formula)
(32) Coliforms	Shall test negative	Shall test negative

Note) Ingredient specifications for milk formula powder and follow-up milk formula powder with the water content specification (5.0%) used as the basis shall be converted and applied to milk formula and follow-up milk formula.

12-2 Infant formula

1) Definition

Infant formula refers to a powdery or liquid product that uses protein separated from soybean or other food as the source of protein and is manufactured and processed by adding other food, minerals, vitamins, or other nutrients to protein so as to be used as a substitute for breast milk or milk formula and help the normal growth and development of infants when breast feeding or feeding of milk formula is difficult.

2) Food types

3) Specifications

- (1) Characteristics: Shall have distinctive color and flavor and be free of foreign taste or odor
- (2) Water content (%): not more than 5.0 (applicable only to powdery products)
- (3) Crude protein (g/100kcal): 1.8~4.0
- (4) Crude fat (g/100kcal): 3.3~6.0
- (5) Linoleic acid (mg/100kcal): not less than 300
- (6) Vitamin A (IU/100kcal or $\mu\text{g}/100\text{kcal}$): 250~500 or 75~150
- (7) Vitamin D (IU/100kcal or $\mu\text{g}/100\text{kcal}$): 40~100 or 1~2.5
- (8) Vitamin C (mg/100kcal): not less than 8
- (9) Vitamin B₁ (mg/100kcal): not less than 40
- (10) Vitamin B₂ (mg/100kcal): not less than 60
- (11) Nicotinic acid ($\mu\text{g}/100\text{kcal}$): not less than 250
- (12) Vitamin B₆ ($\mu\text{g}/100\text{kcal}$): not less than 35 (however, when protein is 2.3g or more, the B₆ content shall increase by 15 μg per gram of protein exceeding 2.3g)
- (13) Folic acid ($\mu\text{g}/100\text{kcal}$): not less than 4.0
- (14) Pantothenic acid ($\mu\text{g}/100\text{kcal}$): not less than 300
- (15) Vitamin B₁₂ ($\mu\text{g}/100\text{kcal}$): not less than 0.1
- (16) Vitamin K₁ ($\mu\text{g}/100\text{kcal}$): not less than 4.0
- (17) Biotin ($\mu\text{g}/100\text{kcal}$): not less than 1.5
- (18) Choline (mg/100kcal): not less than 7.0
- (19) Vitamin E (IU/100kcal): not less than 0.7 (however, if linoleic acid is 1g or more, the ratio of Vitamin E to linoleic acid shall be 0.71IU to 1 g.)
- (20) Sodium (mg/100kcal): 20~60
- (21) Potassium (mg/100kcal): 80~200
- (22) Chloride (mg/100kcal): 55~150
- (23) Calcium (mg/100kcal): not less than 50
- (24) Phosphorus (mg/100kcal): not less than 25 (however, the ratio between calcium and phosphorus (Ca:P) shall be 1.2~2.0)
- (25) Magnesium (mg/100kcal): not less than 6.0
- (26) Iron (mg/100kcal): not less than 1.0
- (27) Iodine ($\mu\text{g}/100\text{kcal}$): not less than 5.0
- (28) Copper ($\mu\text{g}/100\text{kcal}$): not less than 60
- (29) Zinc (mg/100kcal): not less than 0.75
- (30) Manganese ($\mu\text{g}/100\text{kcal}$): not less than 5
- (31) Artificial sweeteners: shall not be detected
- (32) Tar colors: shall not be detected
- (33) Bacterial count: not more than 20,000 per gram (shall test negative for liquid products)
- (34) Coliforms: Shall test negative

12-3 Follow-up formula

1) Definition

Follow-up formula refers to a powdery or liquid product that uses protein separated from soybean or other food as the source of protein and is manufactured and processed by adding minerals, vitamins, or other nutrients necessary for the normal growth and development of babies or infants aged 6 months or older so as to be taken in a liquid state during the weaning period.

2) Food types

3) Specifications

- (1) Characteristics: Shall have distinctive color and flavor and be free of foreign taste or odor
- (2) Water content (%): not more than 5.0 (applicable only to powdery products)
- (3) Crude protein (g/100kcal): 3.0~5.5
- (4) Crude fat (g/100kcal): 3.0~6.0
- (5) Linoleic acid (mg/100kcal): not less than 300

- (6) Vitamin A (IU/100kcal or $\mu\text{g}/100\text{kcal}$): 250~500 or 75~225
- (7) Vitamin D (IU/100kcal): 40~120
- (8) Vitamin C (mg/100kcal): not less than 8
- (9) Vitamin B₁ (mg/100kcal): not less than 40
- (10) Vitamin B₂ (mg/100kcal): not less than 60
- (11) Nicotinic acid ($\mu\text{g}/100\text{kcal}$): not less than 250
- (12) Vitamin B₆ ($\mu\text{g}/100\text{kcal}$): not less than 45 (however, when protein is 3.0g or more, the B₆ content shall increase by 15 μg per gram of protein exceeding 3.0g)
- (13) Folic acid ($\mu\text{g}/100\text{kcal}$): not less than 4.0
- (14) Pantothenic acid ($\mu\text{g}/100\text{kcal}$): not less than 300
- (15) Vitamin B₁₂ ($\mu\text{g}/100\text{kcal}$): not less than 0.15
- (16) Vitamin K₁ ($\mu\text{g}/100\text{kcal}$): not less than 4.0
- (17) Biotin ($\mu\text{g}/100\text{kcal}$): not less than 1.5
- (18) Vitamin E (IU/100kcal): not less than 0.7 (however, if linoleic acid is 1g or more, the ratio of Vitamin E to linoleic acid shall be 0.71IU to 1 g.)
- (19) Sodium (mg/100kcal): 20~85
- (20) Potassium (mg/100kcal): not less than 80
- (21) Chloride (mg/100kcal): 55~150
- (22) Calcium (mg/100kcal): not less than 55
- (23) Phosphorus (mg/100kcal): not less than 60 (however, the ratio between calcium and phosphorus (Ca:P) shall be 1.2~2.0)
- (24) Magnesium (mg/100kcal): not less than 6.0
- (25) Iron (mg/100kcal): not less than 1.0
- (26) Iodine ($\mu\text{g}/100\text{kcal}$): not less than 5.0
- (27) Zinc (mg/100kcal): not less than 0.5
- (28) Artificial sweeteners: shall not be detected
- (29) Tar colors: shall not be detected
- (30) Bacterial count: not more than 20,000 per gram (shall test negative for liquid products)
- (31) Coliforms: Shall test negative