CODEX ALIMENTARIUS
INTERNATIONAL FOOD STANDARDS

Food and Agriculture Organization of the United Nations
World Health Organization

E-mail: codex@fao.org - www.codexalimentarius.org

STANDARD FOR MILK POWDERS AND CREAM POWDER

CXS 207-1999

Adopted in 1999. Amended in 2010, 2013, 2014, 2016, 2018, 2022, 2023.

2022 Amendments

Following decisions taken at the Forty-fifth Session of the Codex Alimentarius Commission in December 2022, amendments were made in Section 7.5 Labelling of non-retail containers.

2023 Amendments

Following decisions taken at the Forty-sixth Session of the Codex Alimentarius Commission in December 2023, the food additives provisions were amended in this standard and have been included in the *General Standard for Food Additives* (GSFA) (CXS 192-1995)[1] in line with the process of alignment of all food additive provisions with the GSFA.

1. SCOPE

This standard[i] applies to milk powders and cream powder intended for direct consumption or further processing, in conformity with the description in Section 2 of this standard.

2. DESCRIPTION

Milk powders and cream powder are milk products which can be obtained by the partial removal of water from milk or cream. The fat and/or protein content of the milk or cream may have been adjusted, only to comply with the compositional requirements in Section 3 of this standard, by the addition and/or withdrawal of milk constituents in such a way as not to alter the whey protein to casein ratio of the milk being adjusted.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw materials

Milk and cream

The following milk products are allowed for protein adjustment purposes:

- milk retentate: Milk retentate is the product obtained by concentrating milk protein by ultrafiltration of milk, partly skimmed milk, or skimmed milk;
- milk permeate: Milk permeate is the product obtained by removing milk proteins and milkfat from milk, partly skimmed milk, or skimmed milk by ultrafiltration; and
- lactose.[ii]

3.2 Composition

Cream powder

Minimum milkfat	42% m/m
Maximum water[(a)]	5% m/m
Minimum milk protein in milk solids-not-fat[(a)]	34% m/m

Whole milk powder

Milkfat	Minimum 26% and less than 42% m/m
Maximum water[(a)]	5% m/m
Minimum milk protein in milk solids-not-fat[(a)]	34% m/m

Partly skimmed milk powder

Milkfat	More than 1.5% and less than 26% m/m
Maximum water[(a)]	5% m/m
Minimum milk protein in milk solids-not-fat[(a)]	34% m/m

Skimmed milk powder

Maximum milkfat	1.5% m/m
Maximum water[(a)]	5% m/m
Minimum milk protein in milk solids-not-fat[(a)]	34% m/m

[(a)] The water content does not include water of crystallization of the lactose; the milk solids-not-fat content includes water of crystallization of the lactose.

---

[i] This standard replaced the *Standard for Whole Milk Powder, Partly Skimmed Milk Powder and Skimmed Milk Powder* (A-5-1971) and the *Standard for Cream Powder, Half Cream Powder and High Fat Milk Powder* (A-10-1971).

[ii] See *Standard for Sugars* (CXS 212-1999).

4. FOOD ADDITIVES

Only those additive functional classes indicated as technologically justified in the table below may be used for the product categories specified.

Acidity regulators, anticaking agents and antioxidants used in accordance with Table 1 and Table 2 of the *General Standard for Food Additives* (CXS 192-1995)[1] in food category 01.5.1 (Milk powder and cream powder (plain)) and only certain acidity regulators, anticaking agents, antioxidants, emulsifiers, firming agents and stabilizers in Table 3 are acceptable for use in foods conforming to this standard.

Additive functional class	**Justified use in milk powders and cream powders**
Acidity regulators	X
Anticaking agents	X
Antioxidants	X
Emulsifiers	X
Firming agents	X
Stabilizers	X

X The use of additives belonging to the class is technologically justified.

5. CONTAMINANTS

The products covered by this standard shall comply with the maximum levels for contaminants that are specified for the product in the *General Standard for Contaminants and Toxins in Food and Feed* (CXS 193-1995).[2]

The milk used in the manufacture of the products covered by this standard shall comply with the maximum levels for contaminants and toxins specified for milk by the *General Standard for Contaminants* and *Toxins in Food and Feed* (CXS 193-1995)[2] and with the maximum residue limits for veterinary drug residues and pesticides established for milk by the Codex Alimentarius Commission.

6. HYGIENE

It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CXC 1-1969),[3] the *Code of Hygienic Practice for Milk and Milk Products* (CXC 57-2004)[4] and other relevant Codex Alimentarius texts such as codes of hygienic practice and codes of practice.

The products should comply with any microbiological criteria established in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods* (CXG 21-1997).[5]

7. LABELLING

In addition to the provisions of the *General Standard for the Labelling of Pre-packaged Foods* (CXS 1-1985)[6] and the *General Standard for the Use of Dairy Terms* (CXS 206-1999),[7] the following specific provisions apply:

7.1 Name of the food

The name of the food shall be:

- Cream powder - Whole milk powder - Partly skimmed milk powder - Skimmed milk powder	according to the composition in Section 3.2

Partly skimmed milk powder may be designated “semi-skimmed milk powder” provided that the content of milkfat does not exceed 16 percent m/m and is not less than 14 percent m/m.

If allowed by national legislation or otherwise identified to the consumer in the country where the product is sold, “whole milk powder” may be designated “full cream milk powder” and “skimmed milk powder” may be designated “low fat milk powder”.

7.2 Declaration of milkfat content

If the consumer would be misled by the omission, the milkfat content shall be declared in a manner found acceptable in the country of sale to the final consumer, either (i) as a percentage by mass, or (ii) in grams per serving as quantified in the label provided that the number of servings is stated.

7.3 Declaration of milk protein

If the consumer would be misled by the omission, the milk protein content shall be declared in a manner acceptable in the country of sale to the final consumer, either as (i) a percentage by mass, or (ii) grams per serving as quantified in the label provided the number of servings is stated.

7.4 List of ingredients

Notwithstanding the provision of Section 4.2.1 of the *General Standard for the Labelling of Pre-packaged Foods* (CXS 1-1985),[6] milk products used only for protein adjustment need not be declared.

7.5 Labelling of non-retail containers

The labelling of non-retail containers should be in accordance with the *General Standard for the Labelling of Non-Retail Containers of Foods* (CXS 346-2021).[8]

8. METHODS OF SAMPLING AND ANALYSIS

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended Methods of Analysis and Sampling* (CXS 234-1999)[9] relevant to the provisions in this standard, shall be used.

APPENDIX

ADDITIONAL INFORMATION

The additional information below does not affect the provisions in the preceding sections which are those that are essential to the product identity, the use of the name of the food and the safety of the food.

Additional quality factors

	Whole milk powder	Partially skimmed milk powder	Skimmed milk powder	Method
Titratable acidity	max 18.0	max 18.0	max 18.0	See CXS 234-1999
(ml-0.1 N NaOH/ 10 g-solids-not-fat)				See CXS 234-1999
Scorched particles	max Disc B	max Disc B	max Disc B	See CXS 234-1999
Solubility index (ml)	max 1.0	max 1.0	max 1.0	See CXS 234-1999

NOTES

[1] FAO and WHO. 1995. *General Standard for Food Additives.* Codex Alimentarius Standard, No. CXS 192-1995. Codex Alimentarius Commission. Rome.

[2] FAO and WHO. 1995. *General Standard for Contaminants and Toxins in Food and Feed*. Codex Alimentarius Standard, No. CXS 193-1995. Codex Alimentarius Commission. Rome.

[3] FAO and WHO. 1969. *General Principles of Food Hygiene*. Codex Alimentarius Code of Practice, No. CXC 1-1969. Codex Alimentarius Commission. Rome.

[4] FAO and WHO. 2004. *Code of Hygienic Practice for Milk and Milk Products*. Codex Alimentarius Code of Practice, No. CXC 57-2004). Codex Alimentarius Commission. Rome.

[5] FAO and WHO. 1997. *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods*. Codex Alimentarius Guideline, No. CXG 21-1997. Codex Alimentarius Commission. Rome.

[6] FAO and WHO. 1985. *General Standard for the Labelling of Pre-packaged Foods.* Codex Alimentarius Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome.

[7] FAO and WHO. 1999. *General Standard for the Use of Dairy Terms.* Codex Alimentarius Standard, No. CXS 206-1999. Codex Alimentarius Commission. Rome.

[8] FAO and WHO. 2021. *General Standard for the Labelling of Non-Retail Containers of Foods.* Codex Alimentarius Standard, No. CXS 346-2021. Codex Alimentarius Commission. Rome.

[9] FAO and WHO. 1999. *Recommended Methods of Analysis and Sampling.* Codex Alimentarius Standard, No. CXS 234-1999. Codex Alimentarius Commission. Rome.