CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - E-mail: codex@fao.org - www.codexalimentarius.org

STANDARD FOR DAIRY PERMEATE POWDERS

CXS 331-2017

Adopted in 2017. Amended in 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 7.2 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 applies to dairy permeate powders, in conformity with the description in Section 2 of this standard, intended for further processing and/or as ingredient in other foods.

2. DESCRIPTION

Dairy permeate powders are dried milk products[i] characterized by a high content of lactose:

a) manufactured from permeates which are obtained by removing, through the use of membrane filtration, and to the extent practical, milk fat and milk protein, but not lactose, from milk, whey[ii] (excluding acid whey), cream[iii] and/or sweet buttermilk, and/or from similar raw materials; and/or

b) obtained by other processing techniques involving removal of milk fat and milk protein, but not lactose, from the same raw materials listed under (a) and resulting in an end-product with the same composition as specified in Section 3.3.

Whey permeate powder is the dairy permeate powder manufactured from whey permeate. Whey permeate is obtained by removing whey protein, but not lactose, from whey.

Milk permeate powder is the dairy permeate powder manufactured from milk permeate.[iv]

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw materials

Dairy permeate powders: Milk permeate, whey permeate, cream permeate, sweet buttermilk permeate and/or similar lactose-containing milk products

Whey permeate powder: Whey permeate

Milk permeate powder: Milk permeate

3.2 Permitted ingredients

Seed lactose[v] in the manufacture of pre-crystallized products.

3.3 Composition

Criteria	Dairy permeate powder	Whey permeate powder	Milk permeate powder
Minimum lactose, anhydrous[(a)] (m/m)	76.0%	76.0%	76.0%
Maximum nitrogen (m/m)	1.1%	1.1%	0.8 %
Maximum milk fat (m/m)	1.5%	1.5%	1.5%
Maximum ash (m/m)	14.0%	12.0%	12.0%
Maximum moisture[(b)] (m/m)	5.0%	5.0%	5.0%

(a) Although the products may contain both anhydrous lactose and lactose monohydrate, the lactose content is expressed as anhydrous lactose. 100 parts of lactose monohydrate contain 95 parts of anhydrous lactose.

(b) The moisture content does not include the water of crystallization of the lactose.

In accordance with the provision of Section 4.3.3 of the *General Standard for the Use of Dairy Terms* (CXS 206-1999),[2] the dairy permeate powders covered by this standard may be modified in composition to meet the desired end-product composition, for instance, partial demineralization. However, compositional modifications beyond the minima or maxima specified above for lactose, nitrogen, milk fat, ash and moisture are not considered to be in compliance with the Section 4.3.3 of the *General Standard for the Use of Dairy Terms* (CXS 206-1999).[2]

4. FOOD ADDITIVES

4.1 The use of food additives is not permitted for dairy permeate powders covered by this standard.

---

[i] Definition of *milk product*, see *General Standard for the Use of Dairy Terms* (CXS 206-1999).
[ii] Definition of *whey*, see *Standard for Whey Powders* (CXS 289-1995).
[iii] Definition of *cream*, see the *Standard for Cream and Prepared Creams* (CXS 288-1976).
[iv] Definition of *milk permeate*, see *Standard for Milk Powders and Cream Powder* (CXS 207-1999).
[v] Definition of *lactose*, see the *Standard for Sugars* (CXS 212-1999).

4.2 Processing aids

The processing aids used in products covered by this standard should comply with the *Guidelines on Substances Used as Processing Aids* (CXG 75-2010).[3]

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).[4]

The milk used in the manufacture of the raw materials 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)[4] 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 product 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),[5] the *Code of Hygienic Practice for Milk and Milk Products* (CXC 57-2004)[6] and other relevant Codex 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).[7]

7. LABELLING

In addition to the provisions of the *General Standard for the Labelling of Pre-packaged Foods* (CXS 1-1985)[8] and the *General Standard for the Use of Dairy Terms* (CXS 206-1999),[2] the following specific provisions apply:

7.1 Name of the food

The name of the food shall be dairy permeate powder. Products complying with the relevant descriptions in Section 2 and compositions in Section 3.3 may be named milk permeate powder and whey permeate powder, respectively.

Where appropriate in the country of sale, the name may be supplemented by the designation “lactose-rich deproteinized ____ powder”, the blank being filled with the term dairy, whey or milk, as appropriate to the nature of the product.

7.2 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).[9]

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)[10] relevant to the provisions in this standard, shall be used.

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. 1999.*General Standard for the Use of Dairy Terms.* Codex Alimentarius Standard, No. CXS 206-1999, Codex Alimentarius Commission, Rome.

[3] FAO and WHO. 2010. *Guidelines on Substances Used as Processing Aids.* Codex Alimentarius Guideline, No. CXG 75-2010. Codex Alimentarius Commission, Rome.

[4] 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.

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

[6] 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.

[7] 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.

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

[9] 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.

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