CODEX ALIMENTARIUS
INTERNATIONAL FOOD STANDARDS

Food and Agriculture Organization of the United Nations
World Health Organization

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STANDARD FOR EDIBLE CASEIN PRODUCTS

CXS 290-1995

Adopted in 1995. Revised in 2001.
Amended in 2010, 2013, 2014, 2016, 2018, 2022, 2023.

2022 Amendment

The following amendment was made to the text of the standard following decisions taken at the Forty-fifth Session of the Codex Alimentarius Commission in December 2022.

Page	Location	Text in previous version	Text in amended version
4	Section 7.2 Labelling of non-retail containers	Information required in Section 7 of this Standard and Sections 4.1 to 4.8 of the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985) and, if necessary, storage instructions, shall be given either on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the manufacturer or packer shall appear on the container. However, lot identification and the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such mark is clearly identifiable with the accompanying documents.	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).

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 edible acid casein, edible rennet casein and edible caseinate, intended for direct consumption or further processing, in conformity with the description in Section 2 of this standard.

2. DESCRIPTION

Edible acid casein is the milk product obtained by separating, washing and drying the acid-precipitated coagulum of skimmed milk and/or of other products obtained from milk.

Edible rennet casein is the milk product obtained by separating, washing and drying the coagulum of skimmed milk and/or of other products obtained from milk. The coagulum is obtained through the reaction of rennet or other coagulating enzymes.

Edible caseinate is the milk product obtained by action of edible casein or edible casein curd coagulum with neutralizing agents followed by drying.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw materials

Skimmed milk and/or other products obtained from milk.

3.2 Permitted ingredients

- starter cultures of harmless lactic acid producing bacteria;
- rennet or other safe and suitable coagulating enzymes; and
- potable water.

3.3 Composition

	Rennet casein	**Acid casein**	**Caseinates**
Minimum milk protein in dry matter[(a)]	84.0% m/m	90.0% m/m	88.0% m/m
Minimum content of casein in milk protein	95.0% m/m	95.0% m/m	95.0% m/m
Maximum water[(b)]	12.0% m/m	12.0% m/m	8.0% m/m
Maximum milkfat	2.0% m/m	2.0% m/m	2.0% m/m
Ash (including P_2O_5)	7.5% m/m (min.)	2.5% m/m (max.)	–
Maximum lactose[(c)]	1.0% m/m	1.0% m/m	1.0% m/m
Maximum free acid	–	0.27 ml 0.1 N NaOH/g	–
Maximum pH value	–	–	8.0

(a) Protein content is 6.38 multiplied by the total Kjeldahl nitrogen determined.

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

(c) 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.

[i] Formerly CODEX STAN A-18-1995.

In accordance with the provision of Section 4.3.3 of the *General Standard for the Use of Dairy Terms* (CXS 206-1999),[2] edible casein products may be modified in composition to meet the desired end-product composition. However, compositional modifications beyond the minima or maxima specified above for milk protein in dry matter, casein, water, milkfat, lactose and free acid are not considered to be in compliance with Section 4.3.3.

4. FOOD ADDITIVES

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

Acidity regulators and anticaking agents 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, bulking agents and emulsifiers in Table 3 are acceptable for use in foods conforming to this standard.

Additive functional class	**Justified use in edible casein products:**
Acidity regulators	X
Anticaking agents	X
Bulking agents	X
Emulsifiers	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).[3]

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)[3] 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),[4] the *Code of Hygienic Practice for Milk and Milk Products* (CXC 57-2004)[5] 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).[6]

7. LABELLING

In addition to the provisions of the *General Standard for the Labelling of Pre-packaged Foods* (CXS 1-1985)[7] 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:

- Edible acid casein - Edible caseinate - Edible rennet casein	According to the descriptions in Section 2 and the compositions in Section 3.3.

The name of edible caseinate shall be accompanied by an indication of the cation used.

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).[8]

8. METHODS OF SAMPLING AND ANALYSIS

For checking 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.

1. OTHER QUALITY FACTORS

1.1 Physical appearance

White to pale cream; free from lumps which do not break up under slight pressure.

1.2 Flavour and odour

Not more than slight foreign flavours and odours. The product must be free from offensive flavours and odours.

2. PROCESSING AIDS

Acids used for precipitation purposes:

INS No.	Name
260	Acetic acid, glacial
270	Lactic acid, L-, D- and DL-
330	Citric acid
338	Orthophosphoric acid
507	Hydrochloric acid
513	Sulphuric acid
For renneting enhancement purposes	
509	Calcium chloride

3. ADDITIONAL QUALITY FACTORS

Maximum sediment	Rennet casein	Acid casein	Caseinates
(scorched particles)	15 mg/25 g	22.5 mg/25 g	22.5 mg/25 g (spray dried) 81.5 mg/25 g (roller dried)

Heavy metals

The following limits apply:

Metal	Maximum limit
Copper	5 mg/kg
Iron	20 mg/kg (50 mg/kg in roller dried caseinates)

4. ADDITIONAL METHODS OF 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.

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

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

[5] 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.

[6] 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.

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