

C O D E X A L I M E N T A R I U S

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

Formerly CODEX STAN A-18-1995. Adopted in 1995. Revised in 2001.
Amended in 2010, 2013, 2014, 2016, 2018.

1. SCOPE

This Standard 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
- 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 ₂ O 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.

In accordance with the provision of section 4.3.3 of the *General Standard for the Use of Dairy Terms* (CXS 206-1999), 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 the Section 4.3.3.

4. FOOD ADDITIVES

Only those additives listed below may be used within the limits specified.

Caseinates

INS no.	Name of additive	Maximum level
Acidity regulators		
170	Calcium citrates	Limited by GMP
261(i)	Potassium acetate	
262(i)	Sodium acetate	
263	Calcium acetate	
325	Sodium lactate	
326	Potassium lactate	
327	Calcium lactate	
329	Magnesium lactate, DL-	
331	Sodium citrates	
332	Potassium citrates	
333	Calcium citrates	
345	Magnesium citrates	
380	Triammonium citrates	
339	Sodium phosphates	4 400 mg/kg singly or in combination expressed as phosphorous*
340	Potassium phosphates	
341	Calcium phosphates	
342	Ammonium phosphates	
343	Magnesium phosphates	
452	Polyphosphates	2 200 mg/kg singly or in combination expressed as phosphorous*
500	Sodium carbonates	Limited by GMP
501	Potassium carbonates	
503	Ammonium carbonates	
504	Magnesium carbonates	
524	Sodium hydroxide	
525	Potassium hydroxide	
526	Calcium hydroxide	
527	Ammonium hydroxide	
528	Magnesium hydroxide	

INS no.	Name of additive	Maximum level
Emulsifiers		
322	Lecithins	Limited by GMP
471	Mono- and di-glycerides of fatty acids	
Bulking agents		
325	Sodium lactate	Limited by GMP
Anticaking agents		
170(i)	Calcium carbonate	4 400 mg/kg singly or in combination *
341(iii)	Tricalcium phosphate	
343(iii)	Trimagnesium phosphate	
460	Cellulose	
504(i)	Magnesium carbonate	
530	Magnesium oxide	
551	Silicon dioxide, amorphous	
552	Calcium silicate	
553	Magnesium silicates	
554	Sodium aluminium silicate	265 mg/kg, expressed as aluminium
1442	Hydroxypropylidistach phosphate	4 400 mg/kg singly or in combination *

* Total amount of phosphorous shall not exceed 4400mg/kg.

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).

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) and with the maximum residue limits for veterinary drug residues and pesticides established for milk by the CAC.

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), the *Code of Hygienic Practice for Milk and Milk Products* (CXC 57-2004) 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. LABELLING

In addition to the provisions of the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985) and the *General Standard for the Use of Dairy Terms* (CXS 206-1999), 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

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.

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) 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

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