

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 CREAM AND PREPARED CREAMS

CXS 288-1976

Formerly CODEX STAN A-9-1976. Adopted in 1976. Revised in 2003, 2008.

Amended in 2010, 2018, 2022.

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
9	Section 7.3 Labelling of non-retail containers	Information required in Section 7 of this Standard and Sections 4.1 to 4.8 of the <i>General Standard for the Labelling of Prepackaged Foods</i> (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 a mark is clearly identifiable with the accompanying documents.	The labelling of non-retail containers should be in accordance with the <i>General Standard for the Labelling of Non-Retail Containers of Foods</i> (CXS 346-2021).

1. SCOPE

This standard applies to cream and prepared creams for direct consumption or further processing as defined in Section 2 of this standard.

2. DESCRIPTION

- 2.1 Cream** is the fluid¹ milk product comparatively rich in fat, in the form of an emulsion of fat-in-skimmed milk, obtained by physical separation from milk.
- 2.2 Reconstituted cream** is cream obtained by reconstituting milk products with or without the addition of potable water and with the same end product characteristics as the product described in Section 2.1.
- 2.3 Recombined cream** is cream obtained by recombining milk products with or without the addition of potable water and with the same end product characteristics as the product described in Section 2.1.
- 2.4 Prepared creams** are the milk products obtained by subjecting cream, reconstituted cream and/or recombined cream to suitable treatments and processes to obtain the characteristic properties as specified below.
- 2.4.1 Pre-packaged liquid cream** is the fluid¹ milk product obtained by preparing and packaging cream, reconstituted cream and/or recombined cream for direct consumption and/or for direct use as such.
- 2.4.2 Whipping cream** is the fluid¹ cream, reconstituted cream and/or recombined cream that is intended for whipping. When cream is intended for use by the final consumer the cream should have been prepared in a way that facilitates the whipping process.
- 2.4.3 Cream packed under pressure** is the fluid¹ cream, reconstituted cream and/or recombined cream that is packed with a propellant gas in a pressure-propulsion container and which becomes Whipped Cream when removed from that container.
- 2.4.4 Whipped cream** is the fluid¹ cream, reconstituted cream and/or recombined cream into which air or inert gas has been incorporated without reversing the fat-in-skimmed milk emulsion.
- 2.4.5 Fermented cream** is the milk product obtained by fermentation of cream, reconstituted cream or recombined cream, by the action of suitable micro-organisms, that results in reduction of pH with or without coagulation. Where the content of (a) specific micro-organism(s) is(are) indicated, directly or indirectly, in the labelling or otherwise indicated by content claims in connection with sale, these shall be present, viable, active and abundant in the product to the date of minimum durability. If the product is heat-treated after fermentation the requirement for viable micro-organisms does not apply.
- 2.4.6 Acidified cream** is the milk product obtained by acidifying cream, reconstituted cream and/or recombined cream by the action of acids and/or acidity regulators to achieve a reduction of pH with or without coagulation.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw materials

All creams and prepared creams:

Milk, which may have been subjected to mechanical and physical treatments prior to cream processing.

Additionally, for creams made by reconstitution or recombination:

Butter², milk fat products², milk powders², cream powders², and potable water

Additionally, for prepared creams described in Section 2.4.2 through to Section 2.4.6:

The product that remains after the removal of milk fat by churning milk and cream to manufacture butter and milk fat products (often referred to as buttermilk) and that may have been concentrated and/or dried.

¹ Fluid means capable of pouring at temperatures above freezing.

² For specification, see relevant Codex standard.

3.2 Permitted ingredients

Only those ingredients listed below may be used for the purposes and product categories specified, and only within the limitations specified.

For use in products only for which stabilizers and/or thickeners are justified (see table in Section 4):

- Products derived exclusively from milk or whey and containing 35% (m/m) or more of milk protein of any type (including casein and whey protein products and concentrates and any combinations thereof) and milk powders: These products can be used in the same function as thickeners and stabilizers, provided they are added only in amounts functionally necessary not exceeding 20 g/kg, taking into account any use of the stabilizers and thickeners listed in Section 4.
- Gelatine and starch: These substances can be used in the same function as stabilizers, provided they are added only in amounts functionally necessary as governed by good manufacturing practice taking into account any use of the stabilizers/thickeners listed in section 4.

Additionally, for use in fermented cream, only:

- Starter cultures of harmless micro-organisms including those specified in Section 2 of the *Standard for Fermented Milks* (CXS 243-2003).

Additionally, for use in fermented cream and acidified cream, only:

- Rennet and other safe and suitable coagulating enzymes to improve texture without achieving enzymatic coagulation.
- Sodium chloride.

3.3 Composition

Milk fat: Minimum 10% (w/w)

Compositional modification below the minimum specified above for milk fat is 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).

4. FOOD ADDITIVES

Only those additives classes indicated in the table below may be used for the product categories specified. Within each additive class, and where permitted according to the table, only those additives listed below may be used and only within the limits specified.

Stabilizers and thickeners, including modified starches may be used singly or in combination, in compliance with the definitions for milk products and only to the extent that they are functionally necessary, taking into account any use of gelatine and starch as provided for in Section 3.2.

Product category	Additive functional class			
	Stabilizers ^(a)	Acidity regulators ^(a)	Thickeners ^(a) and emulsifiers ^(a)	Packing gases and propellants
Prepackaged liquid cream (2.4.1):	X	X	X	–
Whipping cream (2.4.2):	X	X	X	–
Cream packed under pressure (2.4.3):	X	X	X	X
Whipped cream (2.4.4):	X	X	X	X
Fermented cream (2.4.5):	X	X	X	–

Acidified cream (2.4.6):	X	X	X	–
--------------------------	---	---	---	---

^(a) These additives may be used when needed to ensure product stability and integrity of the emulsion, taking into consideration the fat content and durability of the product. With regard to the durability, special consideration should be given to the level of heat treatment applied since some minimally pasteurized products do not require the use of certain additives.

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

– The use of additives belonging to the class is not technologically justified.

INS no.	Name of additive	Maximum level
Acidity Regulators		
270	Lactic acid, L-, D- and DL-	GMP
325	Sodium lactate	GMP
326	Potassium lactate	GMP
327	Calcium lactate	GMP
330	Citric acid	GMP
333	Calcium citrates	GMP
500(i)	Sodium carbonate	GMP
500(ii)	Sodium hydrogen carbonate	GMP
500(iii)	Sodium sesquicarbonate	GMP
501(i)	Potassium carbonate	GMP
501(ii)	Potassium hydrogen carbonate	GMP
Stabilizers and thickeners		
170(i)	Calcium carbonate	GMP
331(i)	Sodium dihydrogen citrate	GMP
331(iii)	Trisodium citrate	GMP
332(i)	Potassium dihydrogen citrate	GMP
332(ii)	Tripotassium citrate	GMP
516	Calcium sulphate	GMP
339(i)	Monosodium dihydrogen phosphate	1 100 mg/kg expressed as phosphorus
339(ii)	Disodium hydrogen phosphate	
339(iii)	Trisodium phosphate	
340(i)	Potassium dihydrogen phosphate	
340(ii)	Dipotassium hydrogen phosphate	

340(iii)	Tripotassium phosphate	
341(i)	Calcium dihydrogen phosphate	
341(ii)	Calcium hydrogen phosphate	
341(iii)	Tricalcium phosphate	
450(i)	Disodium diphosphate	
450(ii)	Trisodium diphosphate	
450(iii)	Tetrasodium diphosphate	
450(v)	Tetrapotassium diphosphate	
450(vi)	Calcium diphosphate	
450(vii)	Calcium dihydrogen diphosphate	
451(i)	Pentasodium triphosphate	
451(ii)	Pentapotassium triphosphate	
452(i)	Sodium polyphosphate	
452(ii)	Potassium polyphosphate	
452(iii)	Sodium calcium polyphosphate	
452(iv)	Calcium polyphosphate	
452(v)	Ammonium polyphosphate	
400	Alginic acid	GMP
401	Sodium alginate	GMP
402	Potassium alginate	GMP
403	Ammonium alginate	GMP
404	Calcium alginate	GMP
405	Propylene glycol alginate	5 000 mg/kg
406	Agar	GMP
407	Carrageenan	GMP
407a	Processed eucheama seaweed (PES)	GMP
410	Carob bean gum	GMP
412	Guar gum	GMP
414	Gum arabic (Acacia gum)	GMP
415	Xanthan gum	GMP

418	Gellan gum	GMP
440	Pectins	GMP
460(i)	Microcrystalline cellulose (Cellulose gel)	GMP
460(ii)	Powdered cellulose	GMP
461	Methyl cellulose	GMP
463	Hydroxypropyl cellulose	GMP
464	Hydroxypropyl methyl cellulose	GMP
465	Methyl ethyl cellulose	GMP
466	Sodium carboxymethyl cellulose (Cellulose gum)	GMP
472e	Diacetyltartaric and fatty acid esters of glycerol	5 000 mg/kg
508	Potassium chloride	GMP
509	Calcium chloride	GMP
1410	Monostarch phosphate	GMP
1412	Distarch phosphate	GMP
1413	Phosphated distarch phosphate	GMP
1414	Acetylated distarch phosphate	GMP
1420	Starch acetate	GMP
1422	Acetylated distarch adipate	GMP
1440	Hydroxypropyl starch	GMP
1442	Hydroxypropyl distarch phosphate	GMP
1450	Starch sodium octenyl succinate	GMP

Emulsifiers		
322(i)	Lecithin	GMP
432	Polyoxyethylene (20) sorbitan monolaurate	1 000 mg/kg
433	Polyoxyethylene (20) sorbitan monooleate	
434	Polyoxyethylene (20) sorbitan monopalmitate	
435	Polyoxyethylene (20) sorbitan monostearate	

436	Polyoxyethylene (20) sorbitan tristearate	
471	Mono- and diglycerides of fatty acids	GMP
472a	Acetic and fatty acid esters of glycerol	GMP
472b	Lactic and fatty acid esters of glycerol	GMP
472c	Citric and fatty acid esters of glycerol	GMP
473	Sucrose esters of fatty acids	5 000 mg/kg
475	Polyglycerol esters of fatty acids	6 000 mg/kg
491	Sorbitan monostearate	5 000 mg/kg
492	Sorbitan tristearate	
493	Sorbitan monolaurate	
494	Sorbitan monooleate	
495	Sorbitan monopalmitate	
Packing gases		
290	Carbon dioxide	GMP
941	Nitrogen	GMP
Propellant		
942	Nitrous oxide	GMP

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 Pre-packaged 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

7.1.1 The name of the food shall be as specified in Section 2 of this standard, as appropriate and taking into account section 7.1.3. However, “pre-packaged liquid cream” may be designated as “cream” and “cream packed under pressure” may be designated by another descriptive term that refers to its nature or intended use or as “Whipped Cream”. The term “prepared cream” should not apply as a designation.

The products covered by this standard may alternatively be designated with other names specified in the national legislation of the country in which the product is manufactured and/or sold or with a name existing by common usage, provided that such designations do not create an erroneous impression in the country of retail sale regarding the character and identity of the food.

In addition, labelling statements, such as product designation of fermented creams and content claims, may include reference to the terms “Acidophilus”, “Kefir”, and “Kumys”, as appropriate, provided that the product has been fermented by the corresponding specific starter culture(s) specified in Section 2.1 of the *Standard for Fermented Milks* (CXS 243-2003), and provided that the product complies with those compositional microbiological criteria that are applicable to the corresponding fermented milk as specified in Section 3.3 of that Standard.

7.1.2 The designation shall be accompanied by an indication of the fat content that is acceptable in the country of retail sale, either as a numerical value or by a suitable qualifying term, either as part of the name or in a prominent position in the same field of vision.

Nutrition claims, when used, shall be in accordance with the *Guidelines for Use of Nutrition and Health Claims* (CXG 23-1997). For this purpose only, the level of 30% milk fat constitutes the reference.

7.1.3 Creams which have been manufactured by the recombination or reconstitution of dairy ingredients as specified in Sections 2.2 and 2.3 shall be labelled as “Recombined cream” or “Reconstituted cream” or another truthful qualifying term if the consumer would be misled by the absence of such labelling.

7.1.4 An appropriate description of the heat treatment should be given, either as part of the name or in a prominent position in the same field of vision, if the consumer would be misled by the absence of such labelling.

When reference is made in the labelling to the type of heat treatment(s) applied, the definitions established by the Codex Alimentarius Commission shall apply.

7.2 Declaration of milk fat content

The milk fat content shall be declared in a manner acceptable in the country of sale to the final consumer, either as (i) a percentage of mass or volume, (ii) in grams per serving as qualified in the label, provided that the number of servings is stated.

Where the fat content of the product is indicated by a numerical value in accordance with Section 7.1.2, such indication may constitute the fat declaration, provided that the indication includes any additional information as required above.

7.3 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. 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.