

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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GENERAL STANDARD FOR CHEESE

CXS 283-1978

Formerly CODEX STAN A-6-1973. Adopted in 1973. Revised in 1999.
Amended in 2006, 2008, 2010, 2013, 2018.

1. SCOPE

This Standard applies to all products, intended for direct consumption or further processing, in conformity with the definition of cheese in Section 2 of this Standard. Subject to the provisions of this Standard, standards for individual varieties of cheese, or groups of varieties of cheese, may contain provisions which are more specific than those in this Standard and in these cases, those specific provisions shall apply.

2. DESCRIPTION

2.1 Cheese is the ripened or unripened soft, semi-hard, hard, or extra-hard product, which may be coated, and in which the whey protein/casein ratio does not exceed that of milk, obtained by:

- (a) coagulating wholly or partly the protein of milk, skimmed milk, partly skimmed milk, cream, whey cream or buttermilk, or any combination of these materials, through the action of rennet or other suitable coagulating agents, and by partially draining the whey resulting from the coagulation, while respecting the principle that cheese-making results in a concentration of milk protein (in particular, the casein portion), and that consequently, the protein content of the cheese will be distinctly higher than the protein level of the blend of the above milk materials from which the cheese was made; and/or
- (b) processing techniques involving coagulation of the protein of milk and/or products obtained from milk which give an end-product with similar physical, chemical and organoleptic characteristics as the product defined under (a).

2.1.1 Ripened cheese is cheese which is not ready for consumption shortly after manufacture but which must be held for such time, at such temperature, and under such other conditions as will result in the necessary biochemical and physical changes characterizing the cheese in question.

2.1.2 Mould ripened cheese is a ripened cheese in which the ripening has been accomplished primarily by the development of characteristic mould growth throughout the interior and/or on the surface of the cheese.

2.1.3 Unripened cheese including fresh cheese is cheese which is ready for consumption shortly after manufacture.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw materials

Milk and/or products obtained from milk.

3.2 Permitted ingredients

- Starter cultures of harmless lactic acid and/or flavour producing bacteria and cultures of other harmless microorganisms
- Safe and suitable enzymes
- Sodium chloride
- Potable water

4. FOOD ADDITIVES

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

Unripened cheeses

As listed in the *Group Standard for Unripened Cheese Including Fresh Cheese* (CXS 221-2001).

Cheeses in brine

As listed in the *Standard for Cheeses in Brine* (CXS 208-1999).

Ripened cheeses, including mould ripened cheeses

Additives not listed below but provided for in Codex individual standards for varieties of ripened cheeses may also be used for similar types of cheese within the limits specified within those standards.

INS no.	Name of additive	Maximum level
Colours		
100	Curcumins (<i>for edible cheese rind</i>)	Limited by GMP
101	Riboflavins	Limited by GMP
120	Carmines (<i>for red marbled cheeses only</i>)	Limited by GMP
140	Chlorophyll (<i>for green marbled cheeses only</i>)	Limited by GMP
141	Chlorophylls, copper complexes	15 mg/kg
160a(i)	Carotene, <i>beta</i> -, synthetic	25mg/kg
160a(ii)	Carotenes, <i>beta</i> -, vegetable	600 mg/kg
160b(ii)	Annatto extracts, norbixin based	50 mg/kg
160c	Paprika oleoresin	Limited by GMP
160e	Carotenal, <i>beta</i> -apo-8'-	35 mg/kg
160f	Carotenoic acid, ethyl ester, <i>beta</i> -apo-8'-	35 mg/kg
162	Beet red	Limited by GMP
171	Titanium dioxide	Limited by GMP
Acidity regulators		
170	Calcium carbonates	Limited by GMP
504	Magnesium carbonates	
575	Glucono delta-lactone	
Preservatives		
200	Sorbic acid	3 000 mg/kg calculated as sorbic acid
202	Potassium sorbate	
203	Calcium sorbate	
234	Nisin	12.5 mg/kg
239	Hexamethylene tetramine (<i>Provolone only</i>)	25 mg/kg, expressed as formaldehyde
251	Sodium nitrate	50 mg/kg, expressed as NaNO ₃
252	Potassium nitrate	
280	Propionic acid	3 000 mg/kg, calculated as propionic acid
281	Sodium propionate	
282	Calcium propionate	
1105	Lysozyme	Limited by GMP
For surface/rind treatment only:		
200	Sorbic acid	1000mg/kg singly or in combination, calculated as sorbic acid
202	Potassium sorbate	
203	Calcium sorbate	

INS no.	Name of additive	Maximum level
235	Natamycin (pimaricin)	2 mg/dm ² of surface. Not present in a depth of 5 mm
Miscellaneous additive		
508	Potassium chloride	Limited by GMP
Anti-caking agents (Sliced, cut, shredded or grated cheese)		
460	Celluloses	Limited by GMP
551	Silicon dioxide, amorphous	10 000mg/kg singly or in combination. Silicates calculated as silicon dioxide
552	Calcium silicate	
553	Magnesium silicates	
560	Potassium silicate	
Preservatives		
200	Sorbic acid	1000 mg/kg singly or in combination, calculated as sorbic acid
202	Potassium sorbate	
203	Calcium sorbate	

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 cheese. However, the word “cheese” may be omitted in the designation of an individual cheese variety reserved by a Codex standard for individual cheeses, and, in the absence thereof, a variety name specified in the national legislation of the country in which the product is sold, provided that the omission does not create an erroneous impression regarding the character of the food.

- 7.1.1** In case the product is not designated with a variety name but with the designation “cheese” alone, the designation may be accompanied by the appropriate descriptive terms in the following table:

DESIGNATION ACCORDING TO FIRMNESS AND RIPENING CHARACTERISTICS		
According to firmness: Term 1		According to principal ripening: Term 2
MFFB%	Designation	
< 51	Extra hard	Ripened
49–56	Hard	Mould ripened
54–69	Firm/Semi-hard	Unripened/Fresh
> 67	Soft	In Brine

MFFB equals percentage moisture on a fat-free basis, i.e.,

$$\frac{\text{Weight of moisture in the cheese}}{\text{Total weight of cheese} - \text{Weight of fat in the cheese}} \times 100$$

Example:

The designation of a cheese with moisture on a fat-free basis of 57% which is ripened in a manner similar in which Danablu is ripened would be:

“Mould ripened firm cheese or firm mould ripened cheese.”

7.2 Declaration of milk fat content

The milk fat 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, (ii) as a percentage of fat in dry matter, or (iii) in grams per serving as quantified in the label provided that the number of servings is stated.

Additionally, the following terms may be used:

High fat	(if the content of FDM is above or equal to 60%);
Full fat	(if the content of FDM is above or equal to 45% and less than 60%)
Medium fat	(if the content of FDM is above or equal to 25% and less than 45%)
Partially skimmed	(if the content of FDM is above or equal to 10% and less than 25%)
Skim	(if the content of FDM is less than 10%)

7.3 Date marking

Notwithstanding the provisions of Section 4.7.1 of the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985), the date of minimum durability need not be declared in the labelling of firm, hard and extra hard cheese which are not mould/soft-ripened and not intended to be purchased as such by the final consumer: in such cases the date of manufacture shall be declared.

7.4 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, and in the absence of such a container on the cheese itself. 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.

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.

APPENDIX¹

CHEESE RIND

During ripening of the moulded cheese curd in natural creation or in environments in which the air humidity and, possibly, air composition are controlled, the outside of the cheese will develop into a semi-closed layer with a lower moisture content. This part of the cheese is called **rind**. The rind is constituted of cheese mass which, at the start of the ripening, is of the same composition as the internal part of the cheese. In many cases, the brining of cheese initiates the formation of rind. Due to the influence of the salt gradient in the brine, of oxygen, of drying out and of other reactions, the rind successively becomes of a somewhat different composition than the interior of the cheese and often presents a more bitter taste.

During or after ripening the cheese rind can be treated or can be naturally colonized with desired cultures of microorganisms, for instance *Penicillium candidum* or *Brevibacterium linens*. The resulting layer, in some cases referred to as **smear**, forms a part of the rind.

Rindless cheese is ripened by the use of a ripening film. The outer part of that cheese does not develop a rind with a lower moisture content although influence of light of course can cause some difference compared to the inner part.

CHEESE SURFACE

The term “**cheese surface**” is used for the outside layer of cheese or parts of cheese, even in the sliced, shredded or grated form. The term includes the outside of the whole cheese, disregarding whether a rind has been formed or not.

CHEESE COATINGS

Cheese can be coated prior to the ripening, during the ripening process or when the ripening has been finished. When a coating is used during ripening the purpose of the coating is to regulate the moisture content of the cheese and to protect the cheese against micro-organisms.

Coating of a cheese after the ripening has been finished is done to protect the cheese against microorganisms and other contamination, to protect the cheese from physical damage during transport and distribution and/or to give the cheese a specific appearance (e.g. coloured).

Coating can be distinguished very easily from rind, as coatings are made of non-cheese material, and very often it is possible to remove the coating again by brushing, rubbing or peeling it off.

Cheese can be coated with:

- A film, very often polyvinylacetate, but also other artificial material or material composed of natural ingredients, which helps to regulate the humidity during ripening and protects the cheese against microorganisms (for example, ripening films).²
- A layer, mostly wax, paraffin or a plastic, which normally is impermeable to moisture, to protect the cheese after ripening against microorganisms and against physical damage during retail handling and, in some cases to contribute to the presentation of the cheese.

¹ Amendment adopted by the 26th Session of the Codex Alimentarius Commission (2003).

² Wheat gluten or wheat protein products should not be used for technological reasons e.g. coating or processing aids for foods which are gluten-free by nature – *Standard for Wheat Protein Products including Wheat Gluten* (CXS 163-1987).