KENYA STANDARD

DKS 2787: 2018
ICS 67.100.30

Group Standard for Unripened Cheese Including Fresh Cheese

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TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Kenya Dairy Board
Ministry of Health — Food Safety Unit
Directorate of Livestock production
Directorate of Veterinary Services
Egerton University — Department of Dairy and Food Science Technology
Government Chemist's Department
National Public Health Laboratory Services
Kenya Industrial Research and Development Institute (KIRDI)
New Kenya Creameries Cooperative (NKCC)
Brookside Dairy Ltd.
Eldoville Dairies Limited
Githunguri Dairy
Happy Cow Ltd
Sameer Agriculture and Livestock (K) Limited
KIBIDAV Ltd (TOGGS)
Kenya Bureau of Standards — Secretariat

REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

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Foreword

This Standard was prepared by the Milk and Milk Products Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

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).

This standard specifies the general requirements for all types of uripened cheese including the fresh cheeses produced and marketed in Kenya.

In the preparation of this standard useful information was derived from members of the technical committee, Codex standard for Group Standard for Unripened Cheese Including Fresh Cheese (KS Codex Standard 221-2001) and local manufacturers

Group Standard for Unripened Cheese Including Fresh Cheese

1 Scope

This Standard Specifies the general requirements for unripened cheese including fresh cheese, intended for direct consumption or further processing, in conformity with the description in Section 3 of this Standard. Subject to the provisions of this Standard, Kenya Standards for individual varieties of unripened cheese may contain provisions, which are more specific than those in this Standard and in these cases; those specific provisions shall apply.

2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

KS 1552; Code of hygienic practice for milk and milk products

KS EAS 69, Pasteurized milk- Specification

KS CAC/GL 23*, Guidelines for use of nutrition claims*

KS EAS 38, Labelling of prepackaged foods

KS ISO 6611, Milk and milk products — Enumeration of colony—forming units of yeasts and/or moulds — Colony-count technique at 25 degrees C

KS ISO 14501:2007 Milk and milk powder - Determination of aflatoxin M content - Clean-up by immunoaffinity chromatography and determination by high-performance liquid chromatography

AOAC 942.17, Arsenic in foods Molybdenum blue method

AOAC 999.10, Lead, Cadmium,Copper, Iron, and Zinc in foods, Atomic Absorption Spectrophotometry after dry ashing

AOAC 962.16 Beta-lactam Antibiotics in milk

AOAC 980.21, Aflatoxin M1 in milk and cheese-thin layer chromatographic method

AOAC 980.21, organochlorine and organophosphorous pesticide residues in milk and milk products

3 Description

Unripened cheeses including fresh cheeses are products in conformity with the General Standard for Cheese (KS 28-1), which are ready for consumption shortly after manufacture.

4 Essential composition and quality factors

4.1 Compositional requirements

4.2 Raw materials

Milk and/or products obtained from milk complying with relevant Kenya standard

4.3 Permitted ingredients

– Starter cultures of harmless lactic acid and/ or flavour producing bacteria and cultures of other harmless micro-organisms;
– Rennet or other safe and suitable coagulating enzymes;
– Sodium chloride and potassium chloride as a salt substitute; complying with KS CODEX STAN 150

- Calcium chloride in an amount not more than 0.02 percent (calculated as anhydrous calcium chloride) of the weight of the dairy ingredients, used as a coagulation aid
– Potable water; KS EAS 12
– Gelatine and starches: Notwithstanding the provisions in the General Standard for Cheese (CODEX STAN 283-1978), 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 stabilisers/thickeners listed in section 4;
– Vinegar;
– Rice, corn and potato flours and starches: Notwithstanding the provisions in the General Standard for Cheese (KS28-1), these substances can be used in the same function as anti-caking agents for treatment of the surface of cut, sliced, and shredded products only, provided they are added only in amounts functionally necessary as governed by Good Manufacturing Practice taking into account any use of the anti-caking agents listed in section 5.

4.4
For unripened cheese including fresh cheese for which there is an individual standard, only those additions permitted in the individual or group standard may be used.

5 Food additives

Only those food additives listed below may be used and only within the limits specified. Additives not listed below but provided for in individual Codex standards for varieties of Unripened Cheeses may also be used in similar types of cheese within the limits specified within those standards.

Table 1 — Food additives

INS	Name	Maximum Level
501	Potassium carbonates	Limited by GMP
507	Hydrochloric acid	Limited by GMP
575	Glucono delta-lactone (GDL)	Limited by GMP
Stabilizers/thickeners		
Stabilizers and thickeners including modified starches may be used in compliance with the definition for milk products and only to the extent they are functionally necessary taking into account any use of gelatine and starch as provided for in section 3.2		
331	Sodium citrates	Limited by GMP
332	Potassium citrates	
333	Calcium citrates	
339	Sodium phosphates	1 540 mg/kg, singly or in combination, expressed as phosphorous
340	Potassium phosphates	
341	Calcium phosphates	
450(i)	Disodium diphosphate	
450(ii)	Trisodium diphosphate	
400	Alginic acid	Limited by GMP
401	Sodium alginate	
402	Potassium alginate	
403	Ammonium alginate	
404	Calcium alginate	
405	Propylene glycol alginate	5 g/kg
406	Agar	Limited by GMP
407	Carrageenan	
410	Carob bean gum	
412	Guar gum	
413	Tragacanth gum	

415	Xanthan gum	
416	Karaya gum	
417	Tara gum	Limited by GMP
440	Pectins	
460	Cellulose	
466	Sodium carboxymethyl cellulose (Cellulose	
576	Sodium gluconate	
Modified starches as follows:		
1400	Dextrins, roasted starch white and yellow	Limited by GMP
1401	Acid-treated starch	
1402	Alkaline treated starch	
1403	Bleached starched	
1404	Oxidized starch	
1405	Starches, enzyme-treated	
1410	Monostarch phosphate	
1412	Distarch phosphate esterified with sodium trimetasphosphate;	
1413	Phosphated distarch phosphate	
1414	Acetylated distarch phosphate	
1420	Starch acetate	
1422	Acetylated distarch adipate	

1440	Hydroxypropyl starch	
1442	Hydroxypropyl distarch phosphate	
Colours		
100	Curcumins (*for edible cheese rind*)	Limited by GMP
101	Riboflavins	Limited by GMP
140	Chlorophyll	Limited by GMP
141	Copper chlorophylls	15 mg/kg, singly or combined
160a(i)	Carotene, *beta*-, synthetic	25 mg/kg
160a(ii)	Carotenes, *beta*-, vegetable	600 mg/kg
160b(ii)	Annatto extracts – norbixin based	25 mg/kg
160c	Paprika oleoresins	Limited by GMP
160e	Carotenal, *beta*-apo-8'-	35 mg/kg
160f	Carotenoic acid, ethyl ester, *beta*-apo-8'-	35 mg/kg
162	Beet red	Limited by GMP
171	Titanium dioxide	Limited by GMP
Preservatives		
200	Sorbic acid	1 000 mg/kg of cheese, singly or in combination, expressed as sorbic acid
202	Potassium sorbate	
203	Calcium sorbate	
234	Nisin	12.5 mg/kg
280	Propionic acid	Limited by GMP
281	Sodium propionate	
282	Calcium propionate	
283	Potassium propionate	
For surface/rind treatment only:		
235	Natamycin (pimaricin)	2 mg/dm^2 of surface. Not present in a depth of 5 mm.
Foaming agents (for whipped products only)		
290	Carbon dioxide	Limited by GMP
941	Nitrogen	Limited by GMP
Anticaking agents (Sliced, cut, shredded and grated products only (surface		
460	Cellulose	Limited by GMP
551	Silicon dioxide, amorphous	10 000 mg/kg singly or in combination. Silicates calculated as silicon
552	Calcium silicate	
553	Magnesium silicates	
560	Potassium silicate	
Preservatives (Sliced, cut, shredded and grated products only (surface treatment))		
200	Sorbic acid	1 000 mg/kg of cheese, singly or in combination, expressed as sorbic acid
202	Potassium sorbate	
203	Calcium sorbate	
280	Propionic acid	Limited by GMP
281	Sodium propionate	
282	Calcium propionate	
283	Potassium propionate	

235	(Natamycin (pimaricin)	20 mg/kg applied to the surface added during

6. Hygiene

6.1 It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections KS 1552 and other relevant Kenya standards and regulations. The products should comply with any microbiological criteria established in accordance with KS CAC/GL 21

6.2 The products shall comply with any microbiological criteria established in accordance with Table 2 below

Table 2 — Microbiological requirements for Unripened cheeses

S/N	Quality	Requirements cfu/g	Test method
i.	Total plate count /g	*2 x 10^4 cfu/g*	KS ISO 4833
ii.	Listeria monocytogenes *max,*	*Nil per gram*	*KS ISO 4833*
iii.	Salmonella spp	*Nil per gram*	*KS ISO 4833*
iv.	Shigella	*Nil per gram*	*KS ISO 4833* *KS ISO 21567*
v.	Clostridium botulinum	*Nil per gram*	*KS ISO 4833*
vi.	Staphylococcus aureus	*Nil per gram*	*KS ISO 4833*
vii.	E.coli	*Nil per gram*	*KS ISO 4833*
viii.	*Faecal coliforms:, max*	*Nil per gram*	*KS ISO 4832*
ix.	*Non-faecal coliforms, max*	*100 cfu/g*	*KS ISO 4832*
x.	*Mould, max*	*100 cfu/g*	*KS ISO 6611*
xi.	*Yeast, max*	*100 cfu/g*	*KS ISO 6611*

5.3 Fresh cheeses shall also comply with the following microbiological requirements

Table 3 — Additional microbiological requirements for all fresh cheeses

S/N	Quality	Requirements	Test method
i	*Mould, max*	*100 cfu/g*	*KS ISO 6611*
ii	*Yeast, max*	*100 cfu/g*	*KS ISO 6611*

7.1 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* (KS CODEX STAN 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* (KS CODEX STAN 193-1995) and with the maximum residue limits for veterinary drug residues and pesticides established for milk by the CAC.

7.1 Heavy metals

The products covered by this standard shall comply with the maximum limits in Table 3

Table 3 — Limits for heavy metal contaminants for Unripened cheeses

SL No	Heavy metal	MRL (Max.)	Test method
i).	Arsenic (AS)	0.1 ppm	*AOAC 942.17*
ii).	Lead (PH)	0.02 ppm	AOAC 999.10
iii).	Mercury (Hg)	1.0 ppm	AOAC 999.10
iv).	Copper (Cu)	5.0 ppm	AOAC 999.10
v).	Zinc (Zn)	50 ppm	AOAC 999.10
vi).	Tin (Sn)	250 ppm	AOAC 999.10
vii).	Cadmium as Cd,	1.5 ppm	AOAC 999.10
viii).	Iron (fe),	0.5 ppm	AOAC 999.10

7.2 Pesticide residues

In addition to the maximum limits established by the Codex Alimentarius Commission for these products in codex Stan 193; the products covered by the provisions of this standard shall comply with the Maximum Levels for contaminants specified in table 4 below;

Table 4 - maximum pesticide residue Limits for Unripened cheeses

S/N	Parameter	Requirements	Test method

i	ORGANOCHLORINE Group	0.01 ppm	KS ISO 3890-1:2009
ii	ORGANOPHOSPHOROUS Group	0.01 ppm	AOAC 960.40

7.3 Mycotoxin residues

Unripened cheese shall not have more than have 0.5 µg/kg aflatoxin M1 content when tested according to KS ISO 14501:2007/ AOAC 980.21, Aflatoxin M1 in milk and cheese- thin layer chromatographic method

7.4 Antibiotics

Unripened cheese shall not have more than 10.0 ppb total antibiotic as (beta lactam) content when tested according to AOAC 962.16, Beta-lactam Antibiotics in milk

8 PACKAGING AND LABELLING

8.1 Packaging

All cheese shall be packed in food grade material that ensures product safety and integrity.

8.2 Labelling

In addition to the provisions of KS EAS 38 and the General Standard for the Use of Dairy Terms (KS CODEX STAN 206-1999), the following specific provisions apply:

8.2.1 Name of the food

The name of the food shall be unripened cheese. However, the words “unripened cheese” may be omitted in the designation of an individual unripened cheese variety reserved by a Kenya 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.
In case the product is not designated by an alternative or a variety name, but with the designation “unripened cheese”, the designation may be accompanied by a descriptive term such as provided for in the *General Standard for Cheese* (KS 28-1).
Unripened cheese may alternatively be designated “fresh cheese” provided it is not misleading to the consumer in the country in which the product is sold.

8.2.2 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%)

8.2.3 Country of Origin

The country of origin (which means the country of manufacture, not the country in which the name originated) shall be declared. When the product undergoes substantial transformation3) in a second country, the country in which the transformation is performed shall be considered to be the country of origin for the purpose of labelling.

8.2.4 Labelling of non-retail containers

Information required in Clause 8.2 of standard and KS EAS 38 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.

8.2.5 Date marking:

i) Date of manufacture

ii) Expiry date;

ii) Storage instructions and / or conditions

8.2.6 Name and address of manufacturer

8.2.7 Net contents

8.2.8 Lot identification

9 Methods of Analysis and Sampling

3) For instance, repackaging, cutting, slicing, shredding and grating are not regarded as substantial transformation.

The products covered by the provisions of this standard shall be tested using appropriate standard methods declared in this standard. Other test may be performed as per the methods given in the latest AOAC/ Codex/ ISO and other internationally recognized methods

