KENYA STANDARD

DKS 2677:2020
ICS 67.100.30

Provolone cheese — Specification

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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
Ministry of Agriculture, Livestock and Fisheries — State Department of Livestock
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)
Consumer Information Network
New Kenya Creameries Cooperative (NKCC)
Brookside Dairy Ltd.
Eldoville Dairies Limited
Githunguri Dairy
Happy Cow Ltd.
Sun-power Products
Sameer Agriculture and Livestock (K) Limited
KIBIDAV Ltd (TOGGS)

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 Kenya 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 a very nutritious food which consists of a concentration of the constituents of milk, principally fat, casein and insoluble salts, together with water, in which small amounts of soluble salts, lactose, and albumin from milk are coagulated.

There are various types of cheese that are produced and marketed worldwide. This standard specifies the requirements for the type of firm/semi-hard ripened cheese being marketed in Kenya as provolone cheese.

This standard includes a list of food additives, terminology and classification of cheeses, amongst other technical requirements which are important in checking cheese under the regulatory system to prevent adulteration.

This standard cancels and replaces KS 2677:2020, Provolone Cheese — Specification which has been technically revised.

During the preparation of this standard, reference was made to the following document:

CODEX STAN 272:1969, standard for Provolone cheese.

Acknowledgement is hereby made for the assistance derived from this source.

Provolone cheese — Specification

1 Scope

This Kenya Standard specifies the requirements, sampling and test methods for Provolone cheese intended for direct consumption and/ or for further processing

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AOAC 999.10, Official method for lead, cadmium, zinc, copper, and iron in foods Atomic Absorption Spectrophotometry after microwave digestion

CAC/GL 21, Principles and guidelines for the establishment and application of microbiological criteria related to foods

KS CODEX STAN 193, Codex general standard for contaminants and toxins in food and feed

KS CODEX STAN 206, General standard for the use of dairy terms

KS EAS 12, Portable drinking water — Specification

KS EAS 38, Labelling of prepackaged foods — General requirements

KS EAS 805, Use of Nutrition and health claims — Requirements

KS 229, Edible salt — Specification

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

KS 2787, Group standard for unripened cheese including fresh cheese — Specification

KS 2850, Cheeses in brine — Specification

KS ISO 707, Milk and milk products — Guidance on sampling

KS ISO 1735, Cheese and processed cheese products — Determination of fat content — Gravimetric method (Reference method)

KS ISO 4832, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms-colony-count technique

KS ISO 5534, Cheese and processed cheese — Determination of the total solids content (Reference method)

KS ISO 5538, Milk and milk products — Sampling — Inspection by attributes

KS ISO 6579-1, Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp.

KS ISO/TS 6733, Milk and milk products — Determination of lead content — Graphite furnace atomic absorption spectrometric method

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

KS ISO 6888-1, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium

KS ISO 7251, Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique

KS ISO 11290-2, Microbiology of the food chain — Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. — Part 2: Enumeration method

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

ISO 5943, Cheese and processed cheese products — Determination of Sodium chloride content — Potentiometric titration method

3 Description

Provolone is a ripened firm/semi-hard cheese in conformity with the General Standard for Cheese (KS 28-1). The body has a near white or ivory through to light yellow or yellow colour and a fibrous texture with long stranded parallel-orientated protein fibres. It is suitable for cutting and, when aged, for grating as well. Gas holes are generally absent, but few openings and splits are acceptable. The shape is mainly cylindrical or pear-shaped, but other shapes are possible. The cheese is manufactured and sold with or without 1 a rind, which may be coated.

For Provolone ready for consumption, the ripening procedure to develop flavour and body characteristics is normally from 1 month at 10–20 °C depending on the extent of maturity required. Alternative ripening conditions (including the addition of ripening enhancing enzymes) may be used, provided the cheese exhibits similar physical, biochemical and sensory properties as those achieved by the previously stated ripening procedure. Provolone intended for further processing and Provolone of low weights (< 2 kg) need not exhibit the same degree of ripening when justified through technical and/or trade needs.

Provolone is made by “pasta filata” processing which consists of heating curd of a suitable pH value, kneading and stretching until the curd is smooth and free from lumps. Still warm, the curd is cut and moulded, then firmed by cooling in chilled water or brine. Other processing techniques, which give end products with the same physical, chemical and organoleptic characteristics are allowed.

4 Essential compositional and quality requirements

4.1 Raw materials

Cows’ milk or buffaloes’ milk, or their mixtures, and products obtained from these milks.

4.2 Permitted ingredients

a) Starter cultures of harmless lactic acid and/ or flavour producing bacteria and cultures of other harmless micro-organisms including either of the following; Lactobacillus helveticus, Streptococcus salivarius subsp. thermophilus, Lactobacillus delbrueckii subsp. bulgaricus and Lactobacillus casei

b) Rennet or other safe and suitable coagulating enzymes.

c) Sodium chloride and potassium chloride as salt substitute; complying with KS 229

d) Calcium chloride in an amount not more than 0.02 % (calculated as anhydrous calcium chloride) of the weight of the dairy ingredients, used as a coagulation aid.

e) Safe and suitable enzymes to enhance the ripening process.

f) Safe and suitable processing aids.

g) Potable water; complying with KS EAS 12

h) Rice, corn and potato flours and starches: Notwithstanding the provisions in CODEX STAN 283, 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 Clause 5.

4.3 Compositional requirements

Provolone cheese shall comply with the compositional requirements given in Table 1 when tested in accordance with the test methods prescribed therein.

Table 1 — Compositional requirements for provolone cheese

Milk constituent	Minimum content (m/m)	Maximum content (m/m)	Reference level (m/m)	Test method
Milkfat in dry matter	45%	Not restricted	45% to 50%	KS ISO 1735
Dry matter (total solids)	**content***(m/m)* **Maximum content***(m/m)* **Reference level***(m/m)* Depending on the fat in dry matter content according to the table below			KS ISO 5534
	Fat in dry matter content (m/m)	**Corresponding minimum dry matter content (m/m**		
	Equal to or above 45 % but less than 50 %	51 %		
	Equal to or above 50 % but less than 60 %	53 %		
	Equal to or above 60 %	60 %		
	b) Smoked cheese	45 %		
Salt, % max.	3%			KS ISO 5943 or AOAC 975.20

5 Food additives

Food additives may be added in Provolone cheese in accordance with CODEX STAN 192.

6 Hygiene

6.1 It is recommended that Provolone cheese shall be prepared and handled in accordance with the appropriate sections of KS EAS 39, KS 1552 and other relevant standards such as codes of hygienic practice and codes of practice. The products shall comply with the microbiological criteria established in accordance with CAC/GL 21.

6.2 Provolone cheese shall also comply with the microbiological requirements given in Table 3 when tested in accordance with the test methods prescribed therein.

Table 3 — Microbiological requirements for Provolone cheese

S/N	Microorganism	Requirement	Test method
i.	Total coliforms, cfu/g, max.	100	KS ISO 4832
ii.	*Listeria monocytogenes,* cfu/25 g	Not detected	KS ISO 11290-2
iii.	*Salmonella spp.* cfu/25 g	Not detected	KS ISO 6579-1
iv.	*Staphylococcus aureus,* cfu/g	Absent	KS ISO 6888-1
v.	*Escherichia coli*, cfu/g	Absent	KS ISO 7251

7 Contaminants

Provolone cheese shall comply with the maximum levels for contaminants that are specified for the product in KS CODEX STAN 193.

7.1 Heavy metals

When tested in accordance with AOAC 999.10 or KS ISO/TS 6733, the level of lead (Pb) in Provolone cheese shall not exceed 0.02 mg/kg.

7.2 Pesticide residues

Provolone cheese shall comply with the maximum limits for pesticide residues set by Codex Alimentarius Commission.

7.3 Mycotoxin residues

When tested in accordance with KS ISO 14501, the level of Aflatoxin M1 in Provolone cheese shall not exceed 0.50 µg/kg.

7.4 Veterinary drugs residues

Provolone cheese shall comply with the maximum tolerable residue limits for antibiotics and other veterinary drugs set by Codex Alimentarius Commission.

8 Packaging

Provolone cheese shall be packaged in food grade material that ensures product safety and integrity.

9 Labelling

In addition to the provisions of KS EAS 38 and KS CODEX STAN 206, the following specific provisions apply.

9.1 Name of the food

8.2.1 Name of the food

The name Provolone may be applied in accordance with Section 4.1 of the General Standard for the Labelling of Prepackaged Foods (KS EAS 38), provided that the product is in conformity with this Standard. Where customary in the country of retail sale, alternative spelling may be used.

The use of the name is an option that may be chosen only if the cheese complies with this standard. Where the name is not used for a cheese that complies with this standard, the naming provisions of the General Standard for Cheese (KS 28-1) apply.

The designation of products in which the fat content is above the reference range specified in Section 4.3 of this Standard shall be accompanied by an appropriate qualification describing the modification made or the fat content (expressed as fat in dry matter or as percentage by mass whichever is acceptable in the country of retail sale), either as part of the name or in a prominent position in the same field of vision. Suitable qualifiers are the appropriate characterizing terms specified in Section 7.3 of the General Standard for Cheese (KS 28-1) or a nutritional claim in accordance with the Guidelines for Use of Nutrition and Health Claims (KS CXG 23-1997).2 The designation may also be used for cut, sliced, shredded or grated products made from cheese which cheese is in conformity with this Standard.

9.2 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 transformation (see note) 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.

NOTE For instance, repackaging, cutting, slicing, shredding and grating is not regarded as substantial transformation.

9.3 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.

9.4 Name and address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the food shall be declared.

9.5 Net contents

The net contents shall be declared by weight in either the metric ("Système International" units) or as required by the country in which the product is sold.

9.6 List of ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion.

9.7 Storage instructions or conditions for use.

9.8 Date of manufacture.

9.9 Expiry date.

9.10 Batch code/number or lot identification.

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.

10 Sampling

Sampling shall be carried out in accordance with KS ISO 707 and in KS ISO 5538.

Annex A
(informative)

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.

B.1 Appearance characteristics

B.1.1 Typical shapes: Cylindrical (Salame), pear-shaped (Mandarino), pear-shaped cylinder (Gigantino) and flask (Fiaschetta).

B.1.2 Typical packing: The cheese is typically encased in ropes.