

Processed cheese — Specification

PUBLIC REVIEW DRAFT

DKS 2509: 2019

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State Department of Livestock
Government Chemist's Department
Egerton University — Department of Dairy and Food Science Technology
Kenya Industrial Research and Development Institute (KIRDI)
Sameer Agriculture and Livestock (K) Limited
New Kenya Cooperative Creameries (NKCC)
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Foreword

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

Processed cheese, cheese slice, prepared cheese, or cheese food is a food product made from normal cheese and sometimes other unfermented dairy ingredients, plus emulsifiers, extra salt, food colourings, or whey. Many flavors, colors, and textures of processed cheese exist.

Processed cheese has several technical advantages over unprocessed cheese, including extended shelf-life, resistance to separation when cooked, and uniformity of product. Its production also enjoys significant economic advantages over traditional cheese making processes, most often through the ability to incorporate any of a wide variety of less expensive ingredients. The use of emulsifiers in processed cheese results in cheese that melts smoothly when cooked. With prolonged heating, unprocessed cheese will separate into a molten protein gel and liquid fat; processed cheese will not separate in this manner. The emulsifiers, typically sodium phosphate potassium phosphate, tartrate or citrate to reduce the tendency for tiny fat globules in the cheese to coalesce and pool on the surface of the molten cheese.

Because processed cheese does not separate when melted, it is used as an ingredient in a variety of dishes. It is a popular addition to hamburgers, as it does not run off, nor does it change in texture or taste as it is heated. This standard will address the issues of quality and safety in this group of products.

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

General standard for cheese, CXS 283-1978

Acknowledgement is hereby made for the assistance received from these sources.

Processed cheese — Specification

1 Scope

This Kenya Standard specifies the requirements and methods of sampling and test for processed cheese intended for direct consumption.

AOAC 999.10, Official method for lead, cadmium, zinc, copper, and iron in foods Atomic Absorption Spectrophotometry after microwave Digestion
KS CODEX STAN 192, Codex general standard for food additives
KS CODEX STAN 193, Codex general Standard for Contaminants and Toxins in Food and Feed
KS CXS 206-1999, General Standard for the Use of Dairy Terms
KS EAS 153, Drinking (portable) water specification
KS EAS 38, Labelling of prepackaged foods
KS EAS 805, Use of Nutrition and health claims
KS 28-1, General standard for cheese
KS 229, Standard for edible salt
KS 1552, Code of hygienic practice for milk and milk products
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 4833, Microbiology of food and animal feed Stuffs-Horizontal method for the enumeration of microorganisms-colony count Technique at 30
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 5943, Cheese and processed cheese products - Determination of chloride content - Potentiometric titration method
KS ISO 6785:2001, Milk and milk products – Detection of Salmonella spp
KS ISO 6888–1:1999 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 6611, Milk and milk products — Enumeration of colony-forming units of yeasts and/or moulds — Colony-count technique at 25 degrees C
KS ISO/TS 6733, Milk and milk products -- Determination of lead content -- Graphite furnace atomic absorption spectrometric method
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
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 55381: Milk and milk products - Sampling - Inspection by attributes.
KS ISO 16649–2:2001, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli – Part 1: Colony-count technique at 44°C using 5-bromo-4-chloro-3-indolyl Beta-D-glucuronide

3 Product description

Processed cheese is a product obtained by the grinding, mixing, melting and emulsifying, with the aid of heat and an emulsifying agent, of one or more varieties of cheeses followed by heating and agitation resulting in either sliceable or spreadable processed cheese depending on the type of emulsifying agent and the pH.

4 Compositional and quality requirements

4.1 General requirements

Processed cheese shall meet the following general requirements:

- Processed cheese shall have smooth, clean, neat unbroken rind and attractive appearance.
- Processed cheese shall have characteristic colour and flavour of the product
- Sliceable cheese shall be slightly elastic, break easily, and shall not be hard when crushed between fingers;
- Spreadable cheese shall be continuous and homogenous;
- All processed cheese shall be free from openings, holes, breaks, cracks or fissures.

4.2 Permitted food additives

Processed cheese shall contain suitable food additives and the following optional ingredients may be added:

- a) Cream, butter and butter oil may be added in quantities to ensure compliance with the minimum fat requirements;
- b) Salt (sodium chloride);
- c) Vinegar;
- d) Citric acid;
- e) Lactic acid;
- f) Phosphoric acid;
- g) Nisin;
- h) Sodium citrate;
- i) Added condiments and acidifying agents;
- j) Permitted emulsifiers or stabilizers;
- k) Spices and other vegetable seasonings in sufficient quantity to characterize the product;
- m) Cultures of harmless bacteria and enzymes.

4.3 Compositional requirements/limits

Processed cheese shall comply with the requirements/limits given in Table 1 below.

Table 1 — Compositional requirements for processed cheese

SL No.	Parameter	Requirements/limits	Test method
i)	Minimum fat in dry matter content (m/m).	25%	KS ISO 1735
ii)	Dry matter content (m/m)	30 - 75%	KS ISO 5534
iii)	Salt (sodium, calcium or potassium) (dry matter basis), % m/m, max.	3 %	KS ISO 5943

5 Food additives

Processed cheese shall comply with CODEX STAN 192, established by the Codex Alimentarius Commission (CAC).

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 of the *General Principles of Food Hygiene* (KS EAS 39), the *Code of Hygienic Practice for Milk and Milk Products* (KS 1552) and other relevant 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* (KS CXG 21-1997).

6.2 The products shall comply with microbiological criteria established in accordance with Table 4 when tested in accordance with the test methods prescribed therein.

Table 4 — Microbiological requirements for Processed cheese

S/N	Quality	Requirement	Test method
i)	Total coliforms ,CFU/g, max	10	KS ISO 4832
ii)	<i>Listeria monocytogenes</i> , CFU/25g	Absent	KS ISO 11290-2
iii)	<i>Salmonella spp.</i> CFU/25g	Absent	KS ISO 6785
iv)	<i>Staphylococcus aureus</i> , CFU/g	Absent	KS ISO 6888-1
v)	<i>Escherichia coli</i> , cfu/g	Absent	KS ISO 7251
	<i>Yeast and moulds</i> , CFU/g, max	10	KS ISO 6611

7 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).

7.1 Heavy metals

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

7.2 Pesticide residues

All cheeses shall conform to maximum limits residues set by Codex Alimentarius Commission.

7.3 Mycotoxin residues

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

7.4 Veterinary drugs residues

Cheeses shall conform to maximum tolerable residue limits for antibiotics and other veterinary drugs set by Codex Alimentarius Commission.

8 Packaging

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

98. Labelling

In addition to the provisions of the *General Standard for the Labelling of Prepackaged Foods* (KS EAS 38) and the *General Standard for the Use of Dairy Terms* (KS CXS 206-1999), the following specific provisions apply and the *General Standard for the Use of Dairy Terms* (CXS 206-1999)

9.1 Name of the food

The name "Processed cheese or 'processed cheese spread" may be applied in accordance with 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) shall apply.

The designation of products in which the fat content is below or above the reference range but above the absolute minimum 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 general Standard for Cheese (KS 28-1) or a nutritional claim in accordance with the Guidelines for Use of Nutrition and Health Claims (KSEAS 805).

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 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 labeling.

9.3 Declaration of milkfat content

The milk fat content shall be declared in a manner found acceptable in the country of retail sale, 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.

94 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

98 date of manufacture

9.9 Expiry date;

9.10 batch code/number

9.11 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 Methods of sampling and analysis

10.1 Sampling shall be carried out in accordance with the latest version of KS ISO 707 "Milk and Milk products - Guidance on sampling" and in KS ISO 55381: Milk and milk products - Sampling - Inspection by attributes.

10.2 Analysis for cheese shall be carried out in accordance to 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