

**Cheese — Specification**

Part 4:

**Tilsiter/Tilster**

PUBLIC REVIEW DRAFT

## DKS 28-4: 2019

### TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Kenya Dairy Board  
Ministry of Health — Food safety Unit  
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)  
National Public Health Labs  
Department of veterinary services  
Brookside Dairy Ltd.  
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Happy Cow Ltd.  
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# **Cheese — Specification**

## **Part 4: Tilsiter**

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## **DKS 28-4:2019**

### **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 the ripened or unripened soft, semi-hard, hard, or extra-hard milk product, which consists of high concentration of the constituents of milk, principally fat, casein and soluble salts, together with water in which small amounts of soluble salts, lactose, and albumin from milk is coagulated. The milk is coagulated by means of rennet and/or other protease enzymes. It is therefore important to use milk of good quality to obtain high quality cheese.

There are various types of cheese that are produced and marketed worldwide. This Part 4 of this Kenya Standard specifies the requirements for the type of semi-hard cheese being marketed in Kenya as tilsiter cheese.

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

**standard for Tilsiter cheese, CXS 270-1968**

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

## Cheese — Specification

Part 4:

### Tilsiter cheese

#### 1 Scope

This Kenya Standard specifies the requirements and methods of sampling and test for tilster cheese intended for direct consumption and/ or for further processing in conformity with the description in Section 3 of this Standard.

#### 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
- 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 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**

Tilsiter 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 firm-textured (when pressed by thumb) texture suitable for cutting, with irregularly shaped, shiny and evenly distributed gas holes. The cheese is manufactured and sold with or without well-dried smear-developed rind, which may be coated.

For Tilsiter ready for consumption, the ripening procedure to develop flavour and body characteristics is normally from 3 weeks at 10–16°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. Tilsiter intended for further processing need not exhibit the same degree of ripening when justified through technical and/or trade needs.

### **4 Essential composition and quality factors**

#### **4.1 Raw materials**

Cows' milk or buffaloes' milk, or their mixtures, and products obtained from these milks complying with relevant Kenya Standards.

#### **4.2 Permitted ingredients**

The following ingredients shall be permitted in tilsiter cheese:

- Starter cultures of harmless lactic acid and/ or flavour producing bacteria and cultures of other harmless microorganisms;
- Rennet or other safe and suitable coagulating enzymes;
- Potable water; complying with KS EAS 153
- Sodium chloride; and potassium chloride as a salt substitute; complying with KS 229
- Safe and suitable enzymes to enhance the ripening process;
- Safe and suitable processing aids; and
- Rice, corn and potato flours and starches: Notwithstanding the provisions in the general standard for cheese (KS 28-1), 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.

#### **4.3 Composition**

Tilsiter cheese shall have compositional requirements given in Table 1.

**Table 1 — Compositional requirements for Tilsiter cheese**

Milk constituent	Minimum content (m/m)	Maximum content (m/m)	Reference level (m/m)	Test method
Milk fat in dry matter	30 %	Not restricted	45% to 55%	KS ISO 1735
Dry matter	Depending on the fat in dry matter content, according to the table below;			
	Fat in dry matter content (m/m)	Corresponding minimum dry matter content (m/m)		
	Equal to or above 30 % but less than 40 %	49 %	KS ISO 5534	
	Equal to or above 40 % but less than 45 %	53 %		
	Equal to or above 45 % but less than 50 %	55 %		
	Equal to or above 50 % but less than 60 %	57 %		
	Equal to or above 60 % but less than 85 %	61 %		

Compositional modifications beyond the minima and maxima specified above for milk fat and dry matter are not considered to be in compliance with section 4.3.3 of the *General Standard for the Use of Dairy Terms* (CXS KS CXS STAN 206).

## 5 Food additives

Only those additives classes indicated as justified in the table 3 below may be used for the product categories specified. Within each additive class, and where permitted according to the table, only those food additives listed in table 4 below may be used and only within the functions and limits specified.

Table 2 — Food additives classes for Tilster cheese

Additive functional class	Justified use	
	Cheese mass	Surface/rind treatment
Colours:	X <sup>(a)</sup>	—
Bleaching agents:	—	—
Acidity regulators:	X	—
Stabilizers:	—	—
Thickeners:	—	—
Emulsifiers:	—	—
Antioxidants:	—	—
Preservatives:	X	X
Foaming agents:	—	—
Anti-caking agents:	—	X <sup>(b)</sup>

(a) Only to obtain the colour characteristics, as described in Section 2. (b) For the surface of sliced, cut, shredded or grated cheese, only.

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

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

**Table 3 — List of food additives**

INS no.	Name of additive	Maximum level
<b>Colours</b>		
160a(i)	Carotene, <i>beta</i> -,synthetic	35 mg/kg singly or in combination
160a(iii)	Carotene, <i>beta</i> -, <i>Blakeslea trispora</i>	
160e	Carotenal, <i>beta</i> -apo-8'-	
160f	Carotenoic acid, ethyl ester, <i>beta</i> -apo-8'-	
160a(ii)	Carotenes, <i>beta</i> -, vegetable	600 mg/kg
160b(ii)	Annatto extracts – norbixin based	25 mg/kg
<b>Preservatives</b>		
1105	Lysozyme	Limited by GMP
200	Sorbic acid	1 000 mg/kg based on sorbic acid. Surface treatment only*
202	Potassium sorbate	
203	Calcium sorbate	
234	Nisin	12.5 mg/kg
235	Natamycin (natamycin)	2 mg/dm <sup>2</sup> Not present at a depth of 5 mm. Surface treatment only*
251	Sodium nitrate	35 mg/kg Singly or in combination (expressed as nitrate ion)
252	Potassium nitrate	
280	Propionic acid	3 000 mg/kg Surface treatment only*
281	Sodium propionate	
282	Potassium propionate	
<b>Acidity regulators</b>		
170(i)	Calcium carbonate	Limited by GMP
504(i)	Magnesium carbonate	Limited by GMP
575	Glucono delta-lactone	Limited by GMP
<b>Anticaking agents</b>		
460(i)	Microcrystalline cellulose (Cellulose gel)	Limited by GMP
460(ii)	Powdered cellulose	Limited by GMP
551	Silicon dioxide, amorphous	
552	Calcium silicate	



553(i)	Magnesium silicate, synthetic	10 000 mg/kg singly or in combination Silicates calculated as silicon
553(iii)	Talc	

\* For the definition of cheese surface and rind see Appendix to the *general Standard for Cheese (KS 28-1)*

## 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 Tilsiter cheese**

S/N	Quality	Requirement	Test method
i)	Total coliforms ,CFU/g, max	100	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**

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

## **9 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

:

### **9.1 Name of the food**

The name tilsiter may be applied in accordance with KS EAS 38, provided that the product is in compliance 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) or a nutritional claim in accordance with the Use of Nutrition and health claims (KS EAS 805: 2013).

The designation of products in which the fat content is below or above the reference range but above the absolute minimum specified in 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 KS 28-1:2014

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 labelling.

### **9.3 Declaration of milk fat content**

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<sup>2)</sup> For instance, repackaging, cutting, slicing, shredding and grating is not regarded as substantial transformation.

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.

**9.4** 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**

**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

PUBLIC REVIEW DRAFT

# KENYA BUREAU OF STANDARDS (KEBS)

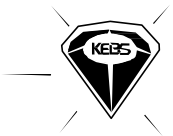
## KEBS CERTIFICATION MARKS

### 1. Product Certification Marks



KEBS Standardization Mark (S-Mark) is issued for use on products that comply with the minimum quality requirements prescribed in Kenya standards. It uses standards as a benchmark for quality compliance and aims at giving manufacturers improved market access and also giving consumers an assurance of quality for the products bearing the mark.

**Standardization Mark**  
SYMBOL FOR PRODUCT QUALITY



**Diamond Mark of Quality**  
SYMBOL FOR PRODUCT QUALITY EXCELLENCE



**Import Standardization Mark**  
SYMBOL FOR PRODUCT QUALITY

### 2. Systems Certification Marks



ISO 9001 REGISTERED FIRM  
QUALITY MANAGEMENT SYSTEM



OCCUPATIONAL HEALTH AND SAFETY  
OHSAS 18001



ISO 14001 REGISTERED FIRM  
ENVIRONMENTAL MANAGEMENT SYSTEM



ISO 22000 REGISTERED FIRM  
FOOD & SAFETY MANAGEMENT SYSTEM

## KEBS is mandated to provide Standardization, Metrology and Conformity Assessment Services through:

- Promotion of standardization in commerce and industry
- Provision of testing and calibration facilities
- Control of the use of standardization marks
- Undertaking educational work in standardization
- Facilitation of the implementation and practical application of standards
- Maintenance and dissemination of the International System of Units (SI) of measurements

## KEBS offers the following services:

- Standards development and harmonization
- Testing services
- Measurement services (Calibration)
- Enforcement of standards
- Product inspection services
- Education and Training in Standardization, Metrology and Conformity Assessment
- Product and Management Systems Certification Services

## INFORMATION ON STANDARDS

Standards are documents that provide a common reference point for the assessment of the quality of goods and services. Standards facilitate transparency in the exchange of products and enhance market access of Kenyan products into local, regional and international markets.

Information on standards and related documents is available at the KEBS standards information centre.

KEBS houses the WTO-TBT National Enquiry Point (NEP) which disseminates notification likely to affect international trade to the industry.

KEBS also provides technical advice on installation and improvement of quality goods and services to the industry so as to facilitate efficient implementation of standards. Some of the advantages of standards include: enhancement of quality assurance, safety and environmental protection measures, minimization of waste, reduction of costs and unnecessary varieties and promotion of interchangeability and increased productivity in industry.

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