DEAS 69: 2022

ICS 67.100.10

DRAFT EAST AFRICAN STANDARD

Pasteurized milk — Specification

EAST AFRICAN COMMUNITY

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Copyright notice

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 017, *Milk and milk products*.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

This fourth edition (DEAS 69: 2022) cancels and replaces the third edition (EAS 69: 2019), which has been technically revised.

Pasteurized milk — Specification

1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for pasteurized milk obtained from raw cow milk.

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/RCP 57, *Code of hygienic practice for milk and milk products*

EAS 38, *Labelling of pre-packaged foods — General requirements*

EAS 39, *Hygiene in the food and drink manufacturing industry — Code of practice*

EAS 67, *Raw cow milk — Specification*

EAS 803, *Nutrition labelling — Requirements*

ISO 11290-1, *Microbiology of the food chain — Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. — Part 1: Detection method*

ISO 11816-1, *Milk and milk products — Determination of alkaline phosphatase activity — Part 1: Fluorimetric method for milk and milk-based drinks*

ISO 14501, *Milk and milk powder — Determination of aflatoxin M1 content — Clean-up by immunoaffinity chromatography and determination by high-performance liquid chromatography*

ISO 14501, *Milk and milk powder — Determination of aflatoxin M1 content — Clean-up by immunoaffinity chromatography and determination by high-performance liquid chromatography*

ISO 2446, *Milk — Determination of fat content*

ISO 4831, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique*

ISO 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30 degrees C by the pour plate technique*

ISO 5764, *Milk — Determination of freezing point — Thermistor cryoscope method (Reference method)*

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

ISO 6731, *Milk, cream and evaporated milk — Determination of total solids content (Reference method)*

ISO 6888-3, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 3: Detection and MPN technique for low numbers*

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

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
raw cow milk
normal, clean and fresh secretion extracted from the udder of a healthy cow,

3.2
pasteurized milk
milk which has been subjected to heat treatment either by batch method, flash pasteurisation or High Temperature Short Time method (HTST)

3.3
batch method
method in which temperature of milk is raised to not less than 65 °C and retained at this temperature for at least 30 min and, immediately and rapidly cooled to 10 °C or less

3.4
High Temperature Short Time method (HTST)
temperature of milk raised to not less than 72 °C and retained at this temperature for at least 15 s and immediately and rapidly cooled to a temperature of 10 °C or less

3.5
flash pasteurization

temperature of milk raised to not less than 80 °C and retained at this temperature for at least 10 s and immediately and rapidly cooled to 10 °C or less.

3.6
foreign matter
any kind of undesirable physical material introduced to a food product at any point in its production, handling, processing or distribution

3.7
food grade packaging material
packaging material made of substances which are safe and suitable for their intended use and which will not alter the quality, safety or organoleptic properties of the product

4 Categories of pasteurized milk

Pasteurized milk shall be categorized as follows:

a) whole/full cream milk;

b) fat reduced milk/semi skimmed milk;

c) low fat milk; and

d) fat free milk/skimmed milk.

5 Requirements

5.1 Raw material

Pasteurized milk shall be obtained from raw cow milk complying with EAS 67.

5.2 General requirements

Pasteurized milk shall:

a) retain the characteristics of raw cow milk;

b) have characteristic texture and colour;

c) be free from foreign matter;

d) be free from additives; and

e) be free from off-flavours and odour.

5.3 Specific requirements

Pasteurized milk shall comply with specific requirements given in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Specific requirements for pasteurized milk

S/N	Characteristic	Requirement				Test method
		Whole/full cream milk	**Fat reduced milk/semi skimmed milk**	**Low fat milk**	**Fat free milk/skimmed milk**	
1.	Milk fat, %	3.25 (min.)	2.71-3.24	0.51 - 2.70	0.50 (max.)	ISO 2446
2.	Milk solids non-fat, %, min.	8.5	8.5	8.5	8.5	ISO 6731
3.	Freezing point, °C	-0.550 to -0.525 **[-0.534 to -0.490]**	-0.550 to -0.525 **[-0.534 to -0.490]**	-0.550 to -0.525 **[-0.534 to -0.490]**	-0.550 to -0.525 **[-0.534 to -0.490]**	ISO 5764
4.	Density at 20 °C, g/ml	1.028 - 1.034	1.028 - 1.034	1.028 - 1.034	1.028 - 1.034	Annex A
5.	Phosphatase	Negative	Negative	Negative	Negative	ISO 11816-1

6 Hygiene

6.1 Pasteurized milk shall be produced and handled in accordance with CAC/RCP 57 and EAS 39.

6.2 Pasteurized milk shall comply with microbiological limits given in Table 2 when tested in accordance with test methods specified therein.

Table 2 — Microbiological limits for pasteurized milk

S/N	Microorganism	Maximum limit	Test method
1.	Total plate count, CFU/ml	10^4	ISO 4833-1
2.	Total coliforms, MPN/ml	10	ISO 4831
3.	*Escherichia coli, MPN* per ml	Absent	ISO 7251
4.	*Listeria monocytogenes*, per 25 ml	Absent	ISO 11290-1
5.	*Salmonella spp*, per 25 ml	Absent	ISO 6579-1
6.	*Staphylococcus aureus*, cfu per ml	Absent	ISO 6888-3

7 Contaminants

7.1 Pesticide residues

Pasteurized milk shall comply with maximum residue limits set by Codex Alimentarius Commission (CX/MRL2).

7.2 Veterinary drugs residues

Pasteurized milk shall comply with maximum residue limits for antibiotics and other veterinary drugs set by Codex Alimentarius Commission (CX/MRL2).

7.3 Heavy metals

When tested in accordance with AOAC 999.10, the level of Lead (Pb) shall not exceed 0.02 mg/kg.

7.4 Mycotoxins

When tested in accordance with ISO 14501, the level of Aflatoxin M1 shall not exceed 0.5 µg/kg.

8 Packaging

Pasteurized milk shall be packed in food grade packaging material that safeguards the integrity and safety of the product.

9 Labelling

The containers shall be labelled in compliance with the requirements of EAS 38 and EAS 803. In addition, the following particulars shall be legibly and indelibly labelled on the container:

a) name of the product as “Pasteurized milk”;

b) category as either:

i. whole/full cream milk;

ii. fat reduced milk/semi skimmed milk;

iii. low fat milk or

iv. fat free milk/skimmed milk.

c) fat content;

d) net content in SI units;

e) name and physical address of manufacturer; packer, distributor, importer, exporter or vendor

f) batch or code number;

g) nutritional information;

h) date of manufacture and expiry date;

i) instruction for storage and use; and

j) country of origin.

10 Sampling

Sampling of pasteurized milk shall be done in accordance with ISO 707

Annex A
(normative)

Determination of density

A.1 General

The density is a relationship between the body mass and the volume this body occupies in the space. The density test is performed in order to be used in the detection of adulteration in the milk since, the addition of water only would cause the decrease in density, whereas the skimming (fat removal) would cause an increased density in the milk, beside supplying important information for the determination of the total dry extract.

A.2 Equipment

A.2.1 **Thermolactodensimeter (TLD)**

A.2.2 **Test tube**, 250 ml

A.3 Method

The density determination is accomplished by the thermolactodensimeter (TLD) because of the practicability of this method.

A.4 Procedure

A.4.1 Place the sample to be analyzed in the clean and dry test tube by carefully inclining the test tube and allowing the liquid to flow down the walls of the glass to avoid incorporation of air which would reduce the density of the milk.

A.4.2 Immerse TLD into the test tube and make it rotate slowly on its own axis.

A.4.3 Take the reading of both density and temperature of the milk as soon as TLD stabilizes.

A.4.4 By using an adequate scale, correct the influence of the temperature. The result will correspond to the corrected milk density.

Bibliography

EAS 69: 2019, *Pasteurized milk — Specification*