
Sterilized milk - Specification



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This African Standard was prepared by ARSO Technical Committee on *Milk and Milk Products* (ARSO/TC 04).

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1. Scope

This draft African Standard specifies requirements, sampling and test methods for sterilized milk intended for direct human consumption or further processing.

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:

AOAC 947.05-1947, Acidity of milk. Titrimetric method

ARS 53, General Principles of Food Hygiene – Code of practice

ARS 56, Pre-packaged Foods – Labelling

ARS 1036, Code of Hygienic Practice for Milk and Milk Products

ARS 1033, Pasteurized milk — Specification

ARS 1034, Dairy industry — Glossary of terms

ARS 1041, Raw Milk — Specification

CXS 206, General Standard for the Use of Dairy Terms

CXS 234, Recommended methods analysis and sampling

CXS 212, Codex Standard for Sugars

CXS 193, General Standard for Contaminants and Toxins in Food and Feed

CXS 346, General Standard for the labelling of non-retail containers of foods

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

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

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

ISO 707, Milk and milk products — Guidance on sampling

ISO 8968-4, Milk and milk products — Determination of nitrogen content — Part 4: Determination of protein and non-protein nitrogen content and true protein content calculation (Reference method)

ISO 23318, Milk, dried milk products and cream — Determination of fat content — Gravimetric method

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ARS 1034 and the following shall apply.

3.1

sterilization

heating milk in sealed container continuously to a temperature between 115 °C to 120 for 15 to 20 minutes or at least 130 °C for a period of one second or more in a continuous flow and then packed under aseptic condition in hermetically sealed containers to ensure preservation.

3.2

sterilized milk

milk heat-treated to a temperature of between 115°C to 120°C for 15 to 20 minutes or at least 130°C for a period of one second or more in a continuous flow and then packed under aseptic condition in hermetically sealed containers to ensure preservation

4 Requirements

4.1 Essential raw materials

Raw materials and ingredients used shall comply with relevant standards.

These include:

- a) Raw milk complying with ARS 1041;
- b) Pasteurized milk complying with ARS 1033;
- c) Reconstituted milk; or
- d) Recombined milk.

4.2 Optional raw materials

Flavoured sterilized milk may contain nuts (whole, chopped, or ground), chocolate, coffee or any other edible flavouring, edible food colourings, non-artificial sugar, and other permitted sweeteners.

4.3 General requirements

Sterilized milk shall:

- a) have a colour and texture characteristic of milk
- b) retain the chemical or nutritional value of milk
- c) Be free from off-flavours and odour.
- d) Be free from additives, preservatives, any other unauthorized substances, and
- e) Be free from added water (except for reconstituted milk).

4.4 Specific requirements

Sterilized milk shall meet the compositional requirements given in Table 1 when tested in accordance with the test methods specified therein. Sterilized milk may be classified as identified in Table 1 and meet the compositional requirements, as shown.

Composition:

Sterilized milk shall be categorized as follows:

- a) whole milk/full cream milk,
- b) fat reduced milk/semi skimmed milk,
- c) low fat milk, and
- d) fat free milk/skimmed milk.

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

Table 1 — Specific requirements for sterilized milk

Parameter	Requirement	Test method
pH value	6.6-6.8	method
pH variation, max.	0.3	
Milk fat content, %, m/m		ISO 23318
High fat milk	At least 4.5	
Full fat/Whole milk	More than 3.0 - 4.5	
Medium fat milk/ Fat-reduced/ Semi-skimmed	More than 1.5 - 3.0	
Partly skimmed milk/ Low Fat	More than 0.5 - 1.5	
Fat free milk/ Skimmed	Not more than 0.5	
Milk solids non-fat, % min	8.5	ISO 6731
Protein content, %, min.	At least 3	ISO 8968-4

5 Food additives

Food additives may be used and only within the limits specified in accordance with CXS 192.

6 Contaminants

6.1 Heavy metals

The products covered by this African Standard shall comply with those maximum limits for metal contaminants specified in CXS 193.

6.2 Aflatoxins

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

6.3 Pesticides residues

Pesticide residue limits shall be in accordance with limits set by the Codex Alimentarius Commission for the product.

6.4 Veterinary drug residues

Veterinary drug residue limits shall be in accordance with limits set by the Codex Alimentarius Commission for the product.

7 Hygiene

The products covered by this African Standard shall be produced, prepared and handled in accordance with the provisions of the appropriate sections of ARS 53 and ARS 1036.

Sterilized milk shall be free from microorganisms and products originating from microorganisms in amounts which may represent a hazard to human health.

Sterilized milk shall comply with microbiological limits given in Table 2 when tested in accordance with the methods specified therein.

Table 2 — Microbiological criteria requirement related to sterilized milk

Food category	Micro-organisms	Sampling plan		Limits		Test method reference ¹	The stage at which the parameter is applied
		n	c	m	M		
Sterilized Milk	Commercial sterilization efficiency test: Total amount of aerobic bacteria	6	0	The packages are incubated at 30 °C for 10 days and at 55 °C for 5 days, and the maximum number of aerobic bacteria is less than 10 cfu/ml.		ISO 4833-1	Final product before leaving the factory & during shelf-life- FSC

n = number of units comprising the sample
c = number of sample units giving values between m and M
m= The level of the microbiological criterion required in the product
M= Value or level of microbial limit not to be reached or greater than in any unit of the sample
PHC: Used as a criterion for the level of hygiene.
FSC: Food Safety Criterion

8 Packaging

Sterilized milk shall be packaged in suitable food grade containers which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product during dispatch, transport and use of the product until the end of its shelf life.

9 Labelling

The containers shall be legibly and indelibly labelled and meet the requirements of labelling ARS 56 and specifically meet the following requirements regarding the labelling of sterilized milk.

- The wording "STERILIZED" shall be shown on the main panel.

9.1 Name of the food

The name of the food shall be sterilized milk, 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 UHT milk complies with this standard.

9.2 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.

9.3 Labelling of non-retail containers

The labelling of non-retail containers shall be in accordance with CXS 346.

10 Methods of sampling

For checking the compliance with this standard, the methods of sampling contained in ISO 707, shall be used.

Draft African Standard for comments only — Not to be cited as African Standard