**Evaporated Milks — Specification**

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#### Foreword

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

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**Introduction**

Evaporated milk are milk products obtained by partial removal of water from milk by heat or by any other process which results in a product having the same composition or characteristics without the addition of sugar. The fat or protein content of the milk may be adjusted by the addition and/or removal of milk constituents in such a way that the ratio of whey protein to casein of the milk being adjusted is not altered. The development of this standard is to ensure quality, consumer safety and promote fair trade practices.

In elaborating this Standard, references were made to inputs from Manufacturers, National and International standards which are hereby duly acknowledged.

## AFRICAN STANDARD

**Evaporated Milks - Specification**

1 Scope

This African Standard specifies requirements, sampling and test methods for evaporated milks, intended for direct 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 999.10 - Lead, Cadmium, Zinc, Copper and iron in foods. Atomic absorption spectrophotometry after microwave digestion

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

ARS 56 Pre-packaged Foods – Labelling

ARS WD-ARS XXX - Glossary of Dairy Terms

CXS 192 - General Standard for Food Additives

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

CXS 234 - Recommended methods of analysis and sampling

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

ISO 4833-1, Microbiology of the food chain-Horizontal method for the enumeration of microorganisms

Part 1: Colony count at 30 °C by the pour plate technique

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

ISO 19020 - Microbiology of the food chain — Horizontal method for the immunoenzymatic detection of staphylococcal enterotoxins in foodstuffs

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 21528-2, Microbiology of the food chain -Horizontal method for the detection and enumeration of Enterobacteriaceae : Part 2: Colony-count technique

3 Terms and definitions

For the purpose of this standard the following definitions apply:

**3.1**

**evaporated milk**

a product which can be obtained by the partial removal of water from milk by heat, or by any other process which leads to a product of the same composition and characteristics. The fat and/or protein content of the milk may have been adjusted, only to comply with the compositional requirements in Clause 4 of this Standard, by the addition and/or withdrawal of milk constituents in such a way as not to alter the whey protein to casein ratio of the milk being adjusted

**3.2**

**milk retentate**

the product obtained by concentrating milk protein by ultrafiltration of milk, partly skimmed milk, or skimmed milk

**3.3**

**milk permeate**

the product obtained by removing milk proteins and milkfat from milk, partly skimmed milk, or skimmed milk by ultrafiltration

4 Requirements

**4.1 Raw materials**

**4.1.1 Essential ingredients**

1. Milk and milk powders
2. Cream and cream powders
3. Milkfat products

**4.1.2 Permitted ingredients**

1. Milk retentate (for protein adjustment purposes only)
2. Milk permeate (for protein adjustment purposes only)
3. Lactose (for protein adjustment purposes only)
4. Potable water
5. Sodium chloride

**4.2 Compositional requirements**

Evaporated milks shall comply with the compositional characteristics specified in Table 1 when tested by appropriate methods.

**Table 1 – Compositional characteristics** **for evaporated milks**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Characteristics** | **Permissible limit (% m/m)** | | | | **Test Method** |
| **Evaporated skimmed milk** | **Evaporated partly skimmed milk** | **Evaporated milk** | **Evaporated high-fat milk** |
| Milkfat | max 1,0 | more than 1,0 and less than 7,5 | min 7,5 | min 15 | Refer to CXS 234 |
| Milk solids1 | min 20,0 | min 20,0 | min 25,0 | -- |
| Milk solids-not-fat1 | -- | -- | -- | min 11,5 |
| Milk protein in milk solids-not-fat1 | min 34,0 | min 34,0 | min 34,0 | min 34,0 |
| Note 1: The milk solids and milk solids-not-fat content include water of crystallization of the lactose. | | | | | |

5 Food Additives

Food additives conforming to Category 01.5.1 and its parent categories and Table 3 of CXS 192 may be used and only within the limits specified therein.

6 Contaminants

**6.1 Heavy metals**

The products covered by this Standard shall comply with those maximum limits for metal contaminants specified in CXS 193 and in particular those listed in Table 3.

**Table 3 — Metal contaminants**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Maximum Limit**  **(mg/kg)** | **Test method** |
| Lead (Pb) | 0.02 | AOAC 999.11 or AOAC 999.10 |

**6.2 Mycotoxins**

When tested in accordance with ISO 14501, the level of aflatoxin M1 shall not exceed 0.50 μg/kg as specified in CXS 193.

**6.3 Pesticides residues**

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

**6.4 Veterinary drug residues**

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

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.

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

When tested by appropriate methods, evaporated milks shall conform to the limits specified in Table 3.

**Table 3 – Microbiological limits for Evaporated Milks**

|  |  |  |
| --- | --- | --- |
| **Microorganism** | **Permissible limit, maximum** | **Test method** |
| *Salmonella* | Absent in 25 ml | ISO 6579-1 |
| *Enterobacteriaceae*, cfu/ml | 5 | ISO 21528-2 |
| *L. monocytogenes* | Absent | ISO 11290-1 |
| APC, cfu/ml | 1x104 | ISO 4833-1 |
| *Staphylococcus*  (Coagulase positive) | Absent in 1 ml | ISO 19020 |

8 Labelling

8.1 Labelling of retail containers

In addition to the provisions of the ARS 56, the following specific provisions shall apply:

**8.1.1 Name of the food**

The name of the product shall be in accordance with the composition specified in sub-clause 4.4. such as:

* evaporated milk
* evaporated skimmed milk
* evaporated partly skimmed milk
* evaporated high-fat milk
* Evaporated partly skimmed milk may be designated “evaporated semi-skimmed milk” if the milkfat content is 4,0 – 4,5% and the minimum milk solids is 24% m/m.

**8.1.2 Declaration of total fat content**

The total fat content shall be declared in a manner found acceptable in the country of sale to the final consumer, either

1. as a percentage by mass, or
2. in grams per serving as quantified in the label provided that the number of servings is stated.

**8.1.3 Declaration of milk protein**

The milk protein content shall be declared in a manner acceptable in the country of sale to the final consumer, either

1. as a percentage by mass, or
2. in grams per serving as quantified in the label provided that the number of servings is stated.

**8.1.4 List of ingredients**

Notwithstanding the provisions of ARS 56, milk constituents used only for protein adjustment need not be declared.

**8.2 Labelling of non-retail containers**

Information required in sub-clause 9.1 of this African Standard and, if necessary, storage instructions, shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer or packer shall appear on the container.

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.

**9 Packaging**

A container or outer container in which the Evaporated milks is packed shall:

(a) be made from a material that :

(i) is suitable for this purpose;

(ii) will protect the contents thereof from contamination; and

(iii) will not impart any undesirable flavour or taste to the contents thereof;

(b) be so strong that it will not be damaged or deformed during normal storage, handling and transport practices;

(c) in the case of a container that is re-used, be thoroughly cleaned and sterilized before the Evaporate Milks is packed therein;

(d) be intact; and

(e) be closed properly in a manner permitted by the nature thereof.

**10 Methods of Sampling and Analysis**

For checking the compliance with this standard, the methods of analysis and sampling contained in CXS 234 relevant to the provisions in this standard, shall be used.

Bibliography

CXS 281-1971 Standard for evaporated milks

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