



Technical Specifications for Sterilized Milk

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V16.0 is the 1st version of WFP specification for sterilized milk.

1. SCOPE

This standard prescribes the requirements for **Sterilized Milk** that WFP receives from donors or purchases then distributes to beneficiaries.

2. STANDARDS AND RECOMMENDATIONS

The specification of **Sterilized Milk** was elaborated after consulting the standards of potential origin and recipient countries.

The following referenced standards are indispensable for the application of this specification. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced standard (including any amendments) applies.

- CAC/MRL 02, Maximum residue limits for veterinary drugs in foods
- CAC/RCP 57, Code of hygiene practice for milk and milk products
- CODEX STAN 1: General standard for the labelling of pre-packaged foods
- CODEX STAN 192, Codex general standard for food additives
- CODEX STAN 193, Codex general standard for contaminants and toxins in foods
- CODEX STAN 206, General Standard for the Use of Dairy Terms
- Milk and Milk products_ Codex second edition, 2011.

3. DEFINITIONS

3.1 Products

Products are Sterilized Milk that are covered by the provision of this specification.

3.2 Raw cow milk

The normal mammary secretion of cow obtained from one or more milkings without either addition to it or extraction from it, intended for consumption as liquid milk or for further processing.

3.3 Homogenization

Process by which milk fat globules are finely divided and interspersed to form a homogeneous product so as to prevent the fat from floating on the surface and adhering to the inside of the container.

3.4 Commercial sterilization

The application of heat at high temperatures for a time sufficient to render milk or milk products commercially sterile, thus resulting in products that are safe and microbiological stable at room temperature.

4. PRODUCT SPECIFICATIONS

4.1 General requirements

4.1.1 Contaminant

The products 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* (CODEX STAN 193-1995).

The milk used in the manufacture of product shall comply with the Maximum Levels for contaminants and toxins specified for milk by the *General Standard for Contaminants and Toxins in Food and Feed* (CODEX STAN 193-1995) and with the maximum residue limits for veterinary drug residues and pesticides established for milk by the CAC.

4.1.2 Hygiene

It is recommended that the products be prepared and handled in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CAC/RCP 1-1969), the *Code of Hygienic Practice for Milk and Milk Products* (CAC/RCP 57-2004) and other relevant Codex 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* (CAC/GL 21-1997).

4.1.3 Food additives

No additives are allowed.

4.1.4 Fit for human consumption guarantee

Suppliers shall have to check the quality of the products and guarantee that the products are 'fit for human consumption'.

4.2 Specific requirements

4.2.1 Product type

The products shall be made from cow milk that is homogenised, standardised to a specific level of fat and processed to be commercially sterile. Fat level and type of milk (Full fat milk, Fat reduced milk, or Fat free milk) are specified in the contract.

4.2.2 Characteristics

The products shall also comply with all requirements from table 1.

4.2.3 Shelf life

The products shall retain table 1 qualities for at least 6 months from date of manufacture when stored dry at ambient temperatures prevalent in the country of destination.

5. PACKAGING

The products must be packed in appropriate packaging which safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product. The containers, including packaging material, shall be made of substances which are safe and suitable for their intended use. They should not impart any toxic substance or undesirable odour or flavour to the product.

5.1 Primary packaging

Unless otherwise specified in the contract, the products shall be packed in only one type of packaging such as Tetra Pak® Aseptic, Combibloc® Aseptic, or equivalent. Net volume and any additional requirement are specified in the contract. Filled Milk should occupy at least 90% of the internal volume capacity of the packing unit.

5.2 Secondary packaging

The cartons used to pack the primary packaging of the products shall be fit for export and multiple-harsh handling. The cartons for 15kg of products (including primary packaging) should meet the following requirements:

- Number of ply: 5
- Total grammage: MIN. 870 gsm
- Edge Crush Test: MIN. 12 kN/m

Carton must be fully filled and glued. Secondary packaging (e.i. cartons with full product) must pass the drop test as per ISTA 2A standard (after each drop, there shall be no rupture or loss of contents).

Two percent empty, marked cartons (included in the price) must be sent with the lot.

Unless fully shrink wrapped pallets are used, dunnage (of strong sheets such as carton, plywood...) should be placed inside each container at every three layers of cartons to provide the required stacking strength. In addition protecting material like air bag, carton, polystyrene, can be used.

Note: For shipping containers, unless fully shrink wrapped pallet are used, and unless otherwise specified in the contract, kraft paper must be adhered to all internal sides, door, and floor of container. Kraft paper also need to be placed on the top of packaging. Desiccant needs to be placed/laid in container at appropriate location in order to absorb moisture. Supplier needs to use high quality desiccant and calculate the quantity of desiccant based on:

- Efficiency of desiccant
- Length of time in transit in container
- Container capacity

Supplier needs to provide in the offer the type of desiccant and quantity to be used for the consignment. If silica gel is used, 15 bags of at least 1 kg each must be placed in each 20 feet container.

6. MARKING

The making of the products shall comply with the provisions of the General Standard for the Labelling of Pre-packaged Foods (CODEX STAN 1-1985) and the General Standard for the Use of Dairy Terms (CODEX STAN 206-1999).

Unless otherwise specified in the contract, the products must have below making:

- Name of the product (*as per contract requirement*)

- Net content (ml)
- Name and address of the supplier (including country of origin)
- Production lot
- Production date
- Best use before date / expiration date (*as per contract requirement*)
- Recommended storage condition: stored dry at ambient temperatures

Additional marking is as per contractual agreement.

7. STORING

The products shall be stored under dry, ventilated and hygienic conditions and far from all source of contaminations.

8. ANALYTICAL REQUIREMENTS

As per contractual agreement, WFP will appoint an inspection company that will check if quality and characteristics of the products match the requirements specified in table 1. Additional tests may be defined in case further quality assessment is required. The tests in table 1 will be performed in addition to analysis performed by supplier according to his own sampling plan.

Table 1: List of compulsory tests and reference methods

No	Tests	Requirements			Reference methods (<i>Or equivalent, latest version</i>)
		<i>Full fat milk</i>	<i>Fat reduced milk</i>	<i>Fat free milk</i>	
1	Fat (%, m/m)	MIN. 3.0	0.5 – 3.0	MAX. 0.5	ISO 1211
2	Milk solids not fat (%, m/m)	MIN. 8.25			ISO 1211 and ISO 6731
3	Acidity (expressed in lactic acid) (%, m/m)	MAX. 0.17			DIN 10316
4	Alcohol test (68% ethanol)	Negative			
5	Phosphatase test	Negative			ISO 11816-1
6	Coliforms	Absent in 1g			ISO 4832
7	Salmonella	Absent in 25g			ISO 6785
8	Total Plate Count (cfu/ml)	0			AOAC 986.32
9	Aflatoxin M1 (mcg/kg)	MAX. 0.1			AOAC 986.16
10	Organoleptic characteristics	Normal in colour, smell, taste and texture. Homogenous and free from impurities and foreign matters.			Organoleptic examination
11	Net content (ml)	As per contractual agreement			Volumetric measurement