World Food Programme

Technical Specifications for

SKIMMED MILK POWDER

Commodity codes: **DAISMP000**
Version: **1, adopted 2020**
Replacing: **Plain Dried Skimmed Milk Powder (20/09/2013)**
Date of **OSCQ** issue: **16.01.2020**

The adjustments are:
-Alignment with Codex Standard 207-1999 for Milk Powder and Cream Powder
-Revising microbiological testing requirements

1. INTRODUCTION

1.1 Scope

This specification describes the requirements for Skimmed Milk Powder (hereafter called the product) that WFP receives from donors or purchases for use in some specific operations[1].

1.2 References and Standards

The product shall comply, except when specified otherwise in the contract, with the following guidelines or standards:

- CODEX STAN 207-1999, Codex standard for milk powders and cream powder.
- CAC/RCP 57-2004, Code of hygiene practice for milk and milk products.
- CODEX STAN 193-1995, Codex general standard for contaminants and toxins in food and feed.
- CODEX STAN 192-1995, Codex general standard for food additives.
- CODEX STAN 1-1985: General standard for the labelling of pre-packaged foods.
- CX/MRL 02-2018, Maximum residue limits (MRLs) and risk management recommendations (RMRs) for residues of veterinary drugs in foods.
- EC 2000/C 312/01: Communication from the Commission relating to the characteristics of products to be supplied as Community food aid
- Commission Regulation (EC) No 2073/2005 on microbiological criteria for foodstuffs.

2. DEFINITION

Skimmed Milk Powder is a milk product which can be obtained by the partial removal of water from milk. The fat and/or protein content of the milk may have been adjusted and to comply with compositional requirements as mentioned in Table-2 for skimmed milk powder.

3. PROCESSING

3.1 Method of processing

The product is obtained by the spray method.

[1] Position Paper: Use of Milk in WFP Operations https://newgo.wfp.org/documents/use-of-milk-wfp-operations

3.2 Food safety and risk assessment at manufacturing premises

For compliance with Codex standards the processor must be able to demonstrate by principle and practice the adoption, implementation and recording of:

- Good Manufacturing Practice
- Hazard Analysis Critical Control Point program

In this context an appointed WFP staff/ WFP appointed Inspector / Quality Surveyor is entitled to visit the factory without prior notice during any period when WFP product is being manufactured to check that the production is done as per contract specification. The Inspector / Quality Surveyor may request to see:

- **Records** (i.e. names of people in charge of the process and quality control, temperatures of the process, mixing times / net contents, cleaning schedules, CCP monitoring, traceability etc.).
- **Procedures** (e.g. cleaning, personnel hygiene, risk assessment and HACCP, environmental monitoring programme, sampling & analysis, product release and control of non-conformance etc.).
- **Instructions** (e.g. process instructions, cleaning instructions, zoning instructions etc.).
- The **quality manual** for the process or factory.

The processor must be ***registered under national food law*** as a processor of foods for human consumption.

4. PRODUCT SPECIFICATIONS

4.1 Sensory characteristics

Appearance: white/white creamy/slightly yellow, shall be homogeneous in colour and free from agglomeration no impurities or coloured particles.
Taste and smell*:* typical, shall retain its natural properties and free from rancidity and unacceptable odour or taste

4.2 Additives

Only food additives listed in Codex Stand 207-1999 may be used and only within the limits specified.

4.3 Contaminants

The product shall be free from objectionable matter; not contain any substances originating from micro-organisms or any other poisonous or deleterious substances such as anti-nutritional factors, heavy metals or residues, in amounts which may represent a hazard to health. Hazard identification should always take into consideration for allergens.

The product covered by this specification 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) and with *CX/MRL 02-2018, Maximum residue limits (MRLs) and risk management recommendations (RMRs) for residues of veterinary drugs in foods*.

4.4 Hygiene

It is recommended that the product covered by the provisions of this standard 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 product 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).

4.5 Shelf life

The product shall retain above qualities for at least 24 months (730 days) from date of manufacture when stored dry at ambient temperatures prevalent in the country of destination. The product must have been manufactured not more than two months before shipment date.

4.6 Fit for human consumption guarantee

Suppliers shall have to check the quality and guarantee that the product is 'fit for human consumption'.

5. PACKAGING

The product shall be packed in appropriate packaging, which safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product. The packaging materials used 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. All packaging materials in direct or indirect contact with the food must be food grade and compliant with the regulation of the country where the product is packed. (if not existing: compliance with EU or FDA legislations required). Bags must be new, uniform, strong, fit for export and multiple handing.

Note[2]: Desiccant must be placed in each container to absorb moisture and condensation during shipment to preserve the product and packaging performance.

Table 1: Guideline on the quantity to be used for calcium chloride-based desiccants:

Estimated days in container	20 ft container	40 ft container
15-59 days	9.00 kg	17.50 kg
60-89 days	11.25 kg	22.50 kg
90-120 days	13.50 kg	25.00 kg

Better alternative material can be used upon agreement with WFP.

In addition, Kraft paper shall be laid to all sides of the container when cargo is loaded loose without shrink-wrapped pallets.

5.1 Primary Packaging

The product can be packed in multi-ply (2-5 ply) paper bags with a separate inner polyethylene bag of minimum 70µm fit for export, of a net content of 25 kg. Capacity: fit to contain 25kg of product.

It is the responsibility of the supplier to ensure that the packaging preserve the food along the required shelf life and prevent from mechanical damages that can occur during transport & handling of the bags.

5.2 Compliance Tests:

The bags of finished commodity must pass the drop test (after each drop, there shall be no rupture or loss of contents) following the principles of the drop test standard (EN 277, ISO 7965-2 or equivalent) with following sequence (each bag should go through the butt dropping and flat dropping):

- Butt dropping: Bag is dropped from a height of 1.20m on the bottom and the top of the bag.
- Flat dropping: Bag is dropped from a height of 1.60m twice on one flat face and twice on the opposite flat face.

[2] For more details, please refer to container loading procedure:
https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp254688.pdf

6. MARKING

The making of the product 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 product must have below making:

- Name of the product (as per contract requirement)
- WFP logo
- Net content (25 kg)
- Name and address of the supplier
- Name and address of the manufacturer
- Country of origin
- Production lot/batch
- Production date (dd/mm/yyyy)
- Best before end (mm/yyyy)
- Recommended storage conditions
- Not for Sale

Additional marking is as per contractual agreement and conforms with Legislations of the Country in which the commodity is received.

7. STORING

The product shall be stored under dry, ventilated and hygienic conditions. Keep stocks away from direct sunlight.

8. ANALYTICAL REQUIREMENTS

As per contractual agreement, WFP will appoint an inspection company that will check if quality and characteristics of the product match the requirements specified in table 2. Additional tests may be defined in case further quality assessment is required. The tests in table 2 will be performed in addition to analysis performed by supplier according to his own sampling plan.

Table 2: List of compulsory tests and reference methods

No	Tests	Requirements	**Reference methods** *(Or equivalent validated methods)*
1.	Milkfat	Max. 1.5% (m/m)	ISO 1736:2008
2.	Milk protein in milk solids-not-fat	Min. 34.0% (m/m)	ISO 8968-1:2014
3.	Moisture	Max. 4.0% (m/m)	ISO 5537:2004
4.	Titratable acidity	Max. 18 ml/10 g solids-non-fat	ISO 6091:2010
5.	Solubility index	Max. 1.0 ml	ISO 8156:2005
6.	Scorched particles	Max. Disc B	ISO 5739:2003
7.	Melamine	Max. 2.5 mg/kg	ISO/TS 15495:2010
8.	Aflatoxin M1	Max. 0.5 µg/kg	ISO 14501:2007
9.	Organoleptic	White or slightly yellow, no impurities or coloured particles. Typical smell and taste.	Sensorial examination
10.	Aerobic colony count	As per table 3	ISO 4833-1:2013
11.	Staphylococcus aureus (Coagulase Positive Staphylococci)	As per table 3	EN ISO 6888-1 or 2
12.	Enterobacteriaceae	As per table 3	ISO 21528-2:2017
13.	Salmonella	As per table 3	ISO 6579-1:2017

Table 3: Microbiological criteria

Microorganisms	**n**	**c**	**m**	**M**	**p-class**
Aerobic colony count	5	2	10^4	10^5	3
Staphylococcus aureus (Coagulase Positive Staphylococci)	5	2	10 cfu/g	100 cfu/g	3
Enterobacteriaceae	5	0	10 cfu/g		2
Salmonella*	5	0	Absent in 125 g		2

**Individual 25 g analytical unit, samples may be pooled by the laboratory, if lab method has been validated. The total analytical unit should be 125g.*

Where

- n: number of units comprising the sample;

- c: the maximum allowable number of defective sample units in a 2-class plan or marginally acceptable sample units in a 3-class plan; or number of sample units giving values between m and M

- m: a microbiological limit which, in a 2-class plan, separates good quality from defective quality or, in a 3-class plan, separates good quality from marginally acceptable quality;

- M: a microbiological limit which, in a 3-class plan, separates marginally acceptable quality from defective quality;

-p: 2 or 3 class plans