

**PAKISTAN STANDARD SPECIFICATION
FOR
CONDENSED MILK
(3RD REVISION)**



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0. FOREWORD

- 0.1 This Pakistan Standard Specification was adopted by the Pakistan Standards & Quality Control Authority; Standards Development Centre, on **31-08-2022** after the draft finalized by the Milk & Dairy Products Technical Committee had been approved by the National Standards Committee for Agricultural & Food Products.
- 0.2 This standard was published in 1963 and first revised in 1991, secondly revised in 2013 and now the committee felt it necessary to revise in the light of latest development in the industry.
- 0.3 Condensed milk, sweetened and unsweetened is produced by the evaporation in vacue of Milk, either whole or skimmed, with or without the addition of sucrose in the form of refined sugar.
- 0.4 In the preparation of this standard the views of the Manufacturers, Academia, Scientist, Suppliers, Consumers, Food Technologist, Testing Authorities and regulators have been taken into consideration.
- 0.5 The assistance derived from CAC-252e for Condensed Milk is acknowledged with thanks.
- 0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with (PS: 103) for Methods of Rounding off Numerical Values the number of significant places retained in the rounded off value shall be the same as that of the specified value in the standard.
- 0.7 This standard is intended chiefly to cover the technical provisions relating to the supply of the material and it does not include all the necessary provisions of a contract.
- 0.8 All the ingredients preparation, processing, packaging storage and for transportation shall be according to PS: 3733 for Halaal Food Management System Requirement for any Organization in the Food Chain.

1. SCOPE

- 1.1 This Standard applies to condensed milks, intended for direct consumption or further processing, in conformity with the description in clause 2 of this Standard.

2. DESCRIPTION

- 2.1 Condensed milks (Evaporated milks) are milk products which can be obtained by the partial removal of water from milk with/without addition of sugar, 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 3 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*.

*The following milk products are allowed for protein adjustment purposes:

- milk retentate Milk retentate is the product obtained by concentrating milk protein by ultrafiltration of milk, partly skimmed milk, or skimmed milk;
- milk permeate Milk permeate is the product obtained by removing milk proteins and milkfat from milk, partly skimmed milk, or skimmed milk by ultrafiltration; and
- lactose* (see relevant PS or Codex standard.)

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw materials & Lactose

Milk and milk powder, cream and cream powders, milk fat products and lactose (See PS: 4873 for Dairy safety and standards for milk & milk products)

3.2 Permitted ingredients

Potable water
Sugar
Sodium chloride

In this product, sugar is generally considered to be sucrose, but a combination of sucrose with other sugars, consistent with PS: 1825 for Good Manufacturing Practice in manufacturing, processing, packing or holding human food, may be used.

TABLE – I

S. #	Characteristic	Full-cream sweetened condensed milk	Evaporated milk (Full Cream)	Sweetened condensed skimmed milk	Evaporated skimmed milk	Sweetened condensed partly skimmed milk	Evaporated partly skimmed milk	Sweetened condensed high-fat milk*	Evaporated high-fat milk*
i.	Milk Fat, % by Weight	Not less than 8 %	Not less than 7.5 %	Not more than 1.0 %	Not more than 1.0 %	More than 1 % and less than 8 % m/m	More than 1 % and less than 7.5 % m/m	Not less than 16 %	Not less than 15 %
ii.	Total milk solid, % by weight, min	28.0 %	25.0 %	24.0 %	20.0 %	24.0 %	20.0 %	30.0 %	26.5 %
iii.	Min milk protein in milk solids-non-fat**	34 %	34 %	34 %	34 %	34 %	34 %	34 %	34 %
iv.	Sugar, % by weight, min	For all sweetened condensed milk, the amount of sugar is restricted by Good Manufacturing practice to a minimum value which safeguards the keeping quality of the product and a maximum value above which crystallization of sugar, may occur.							
v.	Colour	Whitish to light yellow	Whitish light yellow	Whitish to light yellow	Whitish to light yellow	Whitish to light yellow	Whitish to light yellow	Whitish to light yellow	Whitish to light yellow
vi.	Titrateable acid (as lactic acid), % by wt. max	0.30	0.30	0.30	0.30	0.3	0.30	0.30	0.30

*** The milk solids-non-fat in sweetened condensed high-fat milk must not be less than 14% and in evaporated high-fat milk must not be less than 11.5%**

****The milk solids and milk solids-non-fat content include water of crystallization of the lactose.**

4. HYGIENIC REQUIREMENTS:

HYGIENIC REQUIREMENTS: In accordance with PS:1825 for Good Manufacturing Practice in processing, packing, or holding human food. The product shall be processed, packed, stored and distributed under hygienic conditions. Contamination should be avoided. The products shall comply with any rational 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 CONTAMINANTS:

The milk used in the manufacture of the products covered by this Standard 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.

TABLE-II
MICROBIOLOGICAL CRITERIA FOR CONDENSED MILK

Sl. No.	Organisms	Limits
i.	Total plate count	< 1000 cfu/gm
ii.	Coliform	< 10 cfu/gm
iii.	Yeast	< 5 cfu/gm
iv.	Mold	< 5 cfu/gm
v.	<i>Salmonella</i>	Absent (cfu/25gm)

5. FOOD ADDITIVES

5.1 Only those food additives listed below may be used and only within the limits specified.

TABLE-III

INS No.	Name of Additive	Maximum Level
Firming agents		
508	Potassium Chloride	2000 mg/kg singly or 3000 mg/kg in combination, expressed as anhydrous substance
509	calcium chloride	
Stabilizers		
331	Sodium citrates	2000 mg/kg singly or 3000 mg/kg in combination, expressed as anhydrous substance
332	Potassium citrates	
333	Calcium citrates	
Acidity regulators		
170	calcium carbonates	2000 mg/kg singly or 3000 mg/kg in combination, expressed as anhydrous substance
339	sodium phosphates	
340	potassium phosphates	
341	calcium phosphates	
450	Diphosphates	
451	Triphosphates	
452	Polyphosphates	
500	sodium carbonates	
501	Potassium carbonates	
Thickness		
407	Carrageenan	
Emulsifier		
322	Lecithins	Limited by GMP

6. QUALITY OF REAGENTS

Unless specified pure-chemicals shall be employed in tests, and distilled water shall be used where the use of water as a reagent is intended.

NOTE: “Pure Chemicals” shall mean chemicals that do not contain impurities which affect the results of analysis.

7. LABELLING & MARKING

7.1 The product covered by this Standard shall be labeled in accordance with the Pakistan Standard for the Labeling of Prepackaged Foods (PS: 1485) and Guidelines on Nutrition Labeling (PS: 2099).

7.2 The following particulars shall be marked or labeled on each container:

- a) Name of the Products,
- b) The name and address of the manufacturer, packer, distributor, importer, exporter or vendor, shall be declared.
- c) Each container shall be permanently marked in code or in clear to identify the producing factory and the lot.
- d) List of ingredients (Halal) in descending order.
- e) The product shall be HALAL.
- f) Date of manufacture and expiry and storage instruction.
- g) The net contents shall be declared by weight or volume.
- h) Exact milk fat & Protein contents shall be declared,
- i) Storage instructions/conditions,
- j) Pakistan Standard number, PS Mark and License number,
- k) “equivalent of (x)... liters of milk” OR similar statement,
- l) declaration of allergen(s) is/are mandatory,
- m) Not to be used for infants below 12 months OR similar statement

8. PACKING

8.1 **Packing** – Condensed milk shall be packed in hermetically sealed, clean and food grade containers in such a way as to protect it from deterioration.

9. METHOD OF TEST

9.1 The relevant Testing Method of PS, ISO, CAC and of other internationally recognized standard methods may be taken into account for analysis purpose.

10. SAMPLING

10.1 The method of drawing representative samples of the material and the criteria for conformity shall be as prescribed in Appendix-A.

APPENDIX - A
(Clause 4.1)

SAMPLING OF CONDENSED MILK

A.1 SCALE OF SAMPLING

A.1.1 **Lot** - All the containers in a single consignment of the material drawn from a single batch of manufacture shall constitute a lot. If the consignment is declared to consist of different batches of manufacture, the batches shall be marked separately and the groups of containers in each batch shall constitute separate lots.

A.1.2 **Gross Sample** - For the purpose of drawing samples for test, a number of containers shall be selected at random from a lot. This number of containers in relation to the size of the lot, or the scale of sampling shall be subject to an agreement between the purchaser and the vendor. As a guide to such an agreement, a scale of the size of the gross sample is suggested in Table – I.

TABLE – I
MINIMUM NUMBER OF CONTAINERS TO BE
SELECTED FOR SAMPLING FROM VARIOUS SIZES OF LOTS

LOT SIZE	SAMPLE SIZE
2 to 8	2
9 to 27	3
28 to 64	4
65 to 125	5
126 to 216	6
217 to 343	7
344 to 512	8
513 to 729	9
730 to 1000	10
1001 to 1331	11

A.2 TEST SAMPLES AND REFEREE SAMPLE

A.2.1 **Preparation** – Divide the containers in the gross sample to be selected (see A1.2) into three groups of equal number, Mark each container in each group with identity numbers, namely 1,2,3,4, etc., and other particulars regarding the consignment, such as batch number, total number of containers in the lot, name of manufacturer, date of sampling etc.

A.2.2 One group of samples shall be sent to the purchaser and one to the vendor.

A.2.3 The third group of containers bearing seals of the purchaser and the vendor shall constitute the referee sample to be used in case of dispute between the purchaser and the vendor. It shall be kept at a place agreed to between the purchaser and the vendor.

A.3 TEST FOR ACCEPTANCE

A.3.1 Examination and Tests – The purchaser may examine and test each of the containers in the group separately for compliance with the requirements of this standard or he may prepare, for the purpose of such examination and at any stage of the progress of the examination, a composite sample representative of the whole lot, by mixing the contents in individual containers. The number of samples to be tested for bacteriological examination (see Appendices- E and F) and for accelerated storage test (see Appendix-G) shall also be decided by the purchaser.

A.3.2 Criterion for Judgment – When the individual containers in the sample are separately examined and the results vary from one container to another, the criterion for judging the quality of the lot for the purpose of acceptance on the basis of the results obtained shall be at the discretion of the purchaser, unless otherwise previously agreed to between the purchaser and the vendor.
