PS: 364-2013

ICS No.67.100.10

PAKISTAN STANDARD SPECIFICATION
FOR

CONDENSED MILK
(2nd REVISION)

only for research purposes
not for sale
copyright www.psqca.com.pk

(ALL RIGHTS RESERVED)
PAKISTAN STANDARDS AND QUALITY CONTROL AUTHORITY
Standards Development Centre,
PSQCA complex, Standardization Wing II, 1st Floor, Plot - ST-7/A,
Block-3, Scheme No.36, Gulistan-e-Jauher, Karachi.

PAKISTAN STANDARDS & QUALITY CONTROL AUTHORITY
(STANDARDS DEVELOPMENT CENTRE)
(AGRICULTURE & FOOD DIVISION)

MEMBERSHIP LIST OF MILK & DAIRY PRODUCTS TECHNICAL COMMITTEE

CHAIRMAN

1.	Dr. Faqir Muhammad Anjum Director	National Institute of Food Sciences & Technology University of Agriculture, FAISLABAD.

MEMBERS:

2.	Dr. Abdul Ghaffar Dogar Chief	Pakistan Council of Science & Technology Constitution Avenue, ISLAMABAD.
3.	Dr. Ilyas Ahmed Faridi Govt Public Analyst	Food Laboratory, 24-Cooper Road, LAHORE
4.	Govt. Public Analyst,	Directorate General Health Services Sindh Old Building, Wahdat Colony HYDERABAD.
5.	Govt. Public Analyst,	Food Laboratory Phase V, Hayatabad, PESHAWAR
6.	Surgeon General,	AGS Br. (Med Dte). G.H.Q., RAWALPANDI
7.	Mrs. Kishwar Shabina Public Analyst,	CDGK Food Laboratory Jigar muradabadi Road KARACHI.
8.	Govt Public Analyst	Food Laboratory Govt of Balochistan QUETTA.
9.	Director General	Agriculture Research Systems, Khayber Pukhtoonkhua, PESHAWAR
10.	Dr. Riffat Aysha Anis Chief Nutrition Division	National Institute of Health ISLAMABAD.

only for research purposes
not for sale
copyright www.pscqca.com.pk

11.	Quality Assurance Manager	Haleeb Foods Limited 135 Ferozpur Road LAHORE.
12.	Assistant Director,	Remount Veterinary Farms, 8th Liaquat Barracks, Log Area, KARACHI.
13.	Director,	Livestock Products Research Institute, Bahadurnagar, OKARA
14.	Mr. Fairus Hidzir Regional Manager	(PORIM), 904, 905, 9th Floor, Chappal Plaza, Hasrat Mohani Road, KARACHI.
15.	Mr. Atta Muhammad, Ex-S.R.O	House No.K-9/4, Gulshan Housing Project, Near Azeem Pura, KARACHI.
16.	Dr. Farhat Jameel Regulatory Affair Manager	Nestle Pakistan Ltd, 308 – Upper Mall LAHORE.
17.	The Chairman	Department of Food Science & Technology University of Karachi KARACHI.
18.	Mr. Touqir Haider Syed General Manager (Plant)	Engro Foods (Pvt) Ltd., PNSC Building, M. T. Khan Road, P.O. Box No.5736 KARACHI.
19.	Ms. Parveen Aslam Development Manager	Pakistan Dairy Development Company, Kot Lakhpat LAHORE.
20.	Managing Director,	Kabirwala Dairy Ltd, 40-A/B, Off Zafar Ali Road, Gulberg-II, LAHORE.
21.	General Manager,	Yummi Milk Products Ltd, 124/4, Industrial Area, Kot Lakhpat, LAHORE.
22.	Secretary,	Dairy Farmers Association, 4/90, Cattle Colony, Landhi, KARACHI.
23.	Director General (Research)	Livestock & Dairy Development Punjab, Ghazi Road, KARACHI.

only for research purposes
copyright not for sale
www.pscca.com.pk

24.	Chemical Promotion Officer	Merck Marker (Pvt) Ltd D – 7, Shaheed-e-Millat Road, KARACHI.
25.	Chairman	Pakistan Dairy Association (Pvt) Ltd., LAHORE
26.	Mr. Farrukh Ikram	Millac Foods (Pvt) Ltd., KARACHI
27.	Mr. Muhammad Jawad Khan Corporate Quality	Unilever Pakistan (Pvt) Ltd., Avari Hotel Plaza Fatima Jinnah Road KARACHI
28.	Ms. Anahita Anklesaria Products Development Manager	Unilever Pakistan (Pvt) Ltd., Avari Hotel Plaza Fatima Jinnah Road KARACHI
29.	Ms. Sana Minhas Nutrition Manager	Unilever Pakistan (Pvt) Ltd., Avari Hotel Plaza Fatima Jinnah Road KARACHI
30.	Director,	Quality Control Centre PSQCA Block-77, Pak Secretariat, KARACHI.

SECRETARIATE:

1.	Mr. Naseem-us-Sam Assistant Director (Agri. & Food) & Secretary to the Committee	Standards Development Centre, PSQCA, KARACHI
2.	Ms. Yasmin Khanam Examiner (Agri. & Food)	Standards Development Centre, PSQCA, KARACHI

only for research purposes
not for sale
copyright www.psqca.com.pk

PAKISTAN STANDARD SPECIFICATION FOR CONDENSED MILK (2nd REVISION)

0. FOREWORD

0.1 This Pakistan Standard Specification was adopted by the Pakistan Standards & Quality Control Authority; Standards Development Centre, on **21-01-2013** after the draft finalized by the Milk & Diary 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, 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 suppliers, consumers, technologists and testing authorities 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.

only for research purposes
copyright not for sale www.psqca.com.pk

1. SCOPE

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

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.

only for research purposes
not for sale
copyright www.psqca.com.pk

TABLE – I

S. #	Characteristic	Full-cream sweetened condensed milk	Full-cream un sweetened condensed milk	Sweetened condensed skimmed milk	Un sweetened condensed skimmed milk	Sweetened condensed partly skimmed milk	Un Sweetened condensed partly skimmed milk	Sweetened condensed high-fat milk	Un sweetened condensed high-fat milk	Sweetened condensed semi-skimmed milk	Un sweetened condensed semi-skimmed milk
i.	Milk Fat, % by Weight	Not less than 7.5	Not less than 7.5	Not less than 1.0 %	Not more than 0.5	More than 1 % and less than 7.5 m/m	More than 1 % and less than 7.5 m/m	Not less then 16	Not less than 16	4-4.5	4-4.5
ii.	Total milk solid, % by weight, min	28.0	28.0	24.0	20.0	20.0	20	30	14 m/m	28	28
iii.	Minimum milk protein in milk solids-non-fat**	30 %	30 %	30 %	30 %	30 %	30 %	30 %	30 %	30 %	30 %
iv.	Sugar, % by weight, min	For all sweetened condensed milk the amount of sugar is restricted by Good Manufacturing practice in 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	Whitish to light yellow	Whitish to light yellow
	Titratable acid (as lactic acid), % by weight, max	0.30	0.30	0.30	0.30	0.3	0.30	0.30	0.30	0.30	0.30

only for research purposes
not for sale
copyright www.psqca.com.pk

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

4. 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.

only for research purposes not for sale copyright www.psqca.com.pk

TABLE-II

MICROBIOLOGICAL CRITERIA FOR CONDENSED MILK

S.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.	*Salmonella*	Absent (cfu/25gm)

5. Food Additives:

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 332 Potassium citrates 333 Calcium citrates	2000 mg/kg singly or 3000 mg/kg in combination, expressed as anhydrous substance
Acidity regulators 170 calcium carbonates 339 sodium phosphates 340 potassium phosphates 341 calcium phosphates 450 Diphosphates 451 Triphospates 452 Polyphosphates 500 sodium carbonates 501 Potassium carbonates	2000 mg/kg singly or 3000 mg/kg in combination, expressed as anhydrous substance
Thickness 407 Carrageenan	150 mg/kg
Emulsifier 322 Lecithins	Limited by GMP

only for research purposes
not for sale
copyright www.psqca.com.pk

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 in descending order.
(e) Date of manufacture and expiry and storage instruction
(f) The net contents shall be declared by weight or volume
(g) Exact milk fat & Protein contents shall be declared,
(h) Storage instructions/conditions
(i) Pakistan Standard number, PS Mark and License number
(j) "equivalent of (x)… liters of milk" OR similar statement
(k) declaration of allergen(s) is/are mandatory

(l) Not to be used for infants below 12 months OR similar statement

8. PACKING

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:

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:

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

only for research purposes
not for sale
copyright www.psqca.com.pk

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.

only for research purposes
copyright not for sale
www.psdca.com.pk