

**PRODUCT MANUAL
FOR CONDENSED MILK, PARTLY SKIMMED AND
SKIMMED CONDENSED MILK
ACCORDING TO IS 1166:1986**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	Product	:	1166 : 1986
	Title	:	CONDENSED MILK, PARTLY SKIMMED AND SKIMMED CONDENSED MILK
	No. of Amendments	:	4
2.	Sampling Guidelines:		
a)	Raw material	:	Each tank of standardized milk shall be tested for acidity and fat content. Only the tank loads of milk found to be satisfactory in these requirements shall be used in the manufacture of condensed milk. Records of these tests shall be maintained.
b)	Grouping guidelines	:	NA
c)	Sample Size	:	3 CANS
3.	List of Test Equipment	:	ANNEX - A
4.	Scheme of Inspection and Testing	:	ANNEX - B
5.	Possible tests in a day :		
	Requirement		Clause No.
	Colour		4.1.4
	Flavor & Taste		4.1.5
	Size of Lactose Crystals		4.1.8
	Total Milk Solid		4.1.1 & Table 1
	Fat Content		-do-
	Sucrose		-do-
	Titrateable Acidity (as lactic acid)		-do-
	Accelerated Storage Test		-do-
6.	Scope of the Licence :		
	“Licence is granted to use		
	Name of the product	Condensed Milk, Partly Skimmed and Skimmed Condensed Milk	
	Size	Quantities of 200g, 400g, 1 kg and thereafter in multiples of 1 kg. Where the product is filled in tetra packs, the quantities shall be 200ml, 250ml, 500ml and 1litre.	

ANNEX-A

LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

Sl No.	Tests used in with Clause Reference	Test Equipment
1	Colour Clause 4.1.4	-
2	Flavour & Taste Clause 4.1.5	-
3	Size of Lactase Crystals Clause 4.1.8	Microscope
4	Total Milk Solid Clause 4.1.1 & Table 1	Weighing Balance, Hot water bath, Hot Air Oven Distilled Water
5	Fat Content Clause 4.1.1 & Table 1	Butyrometer, Gerber Centrifuge, Water Bath, Analytical Balance, Distillation or evaporation apparatus, drying oven, Mojonnier type fat extraction flasks, wash bottles, fat collection vessels, boiling aids, measuring cylinders. Ammonia solution, Ethanol, Congo red solution, Diethyl ether, Light petroleum, mixed solvent.
6	Sucrose Clause 4.1.1 & Table 1	Polarimeter FRESHING SOLUTION A&B Stock Solution of sugar, Methylene Blue Indicator, Potassium Oxalate, 0.1N NaOH solution, Lead Acetate, ammonia solution, Potassium ferrocyanide solution, Anhydrous Dextrose, Conc, H ₂ SO ₄ , conc, HCL, Copper Sulphate. Volumetric method Sodium hydroxide, stock solution of invert sugar, standard solution of invert sugar, methylene blue indicator, fehling's solution, Zinc acetate solution, Potassium Ferrocyanide solution, concentrated Hydrochloric acid, Concentrated Ammonia solution, Dilute Acetic acid
7	Titrateable Acidity (as lactic acid) Clause 4.1.1 & Table 1	Burette 0.1N NaOH, Phenolphthalein Indicator
8	Accelerated Storage Test Clause 4.1.1 & Table 1	Incubator NA
9	Shigella & Salmonella Clause 4.1.10.1	Digital colony Counter, Incubator, Laminar Air Flow, Autoclave, Hot Air Oven, water baths, Loops, pH meter, culture bottles or flasks, culture tubes Phenol red/brilliant green agar, Nutrient agar, triple sugar/iron agar, urea agar, L-Lysine decarboxylation of β -galactosidase, Reagent for Voges-Proskauer reaction, Reagents for indole reaction, Tryptone-tryptophan medium, Kovacs reagent, semi-solid nutrient agar, saline solution.
10	Coliform Count	Digital colony counter, Incubator, Laminar Air flow,

	Clause 4.1.10.2	Autoclave, Hot Air Oven Violet Red Bile Agar, Sodium Chloride
11	Yeast & Mould count Clause 4.1.10.3	Incubator, Laminar Air Flow, Autoclave, Hot Air Oven, Water bath, Temperature compensated pH meter, culture bottles or flasks Yeast extract-Dextrose-Chloramphenolic agar medium
12	Coagulase⁺ staphylococcus aureus Clause 4.1.10.4	Incubator, Laminar Air Flow, Autoclave, Hot Air Oven Nutrient agar, Blood agar, Salt medium, Baird Parker medium, Ethyl Violet Azide Dextrose Broth, Maclonky Agar medium.
13	E. Coli: Clause 4.1.10.5	Incubator, Laminar Air Flow, Autoclave, Hot Air Oven Maconky agar medium, Maconky Broth medium, Eosin methylene blue lactose agar medium Tergitof-7 agar medium, Nutrient broth, Nutrient agar.

Note: The list above is indicative only and may not be treated as exhaustive.

ANNEX – B

SCHEME OF INSPECTION AND TESTING

- 1. LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.
 - 1.1** The manufacturer shall prepare a calibration plan for the test equipment.
- 2. TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.
- 3. PACKING AND MARKING** – The Standard Mark, as given in the Schedule of the licence, shall be marked on the container or on the label applied to it, provided always that the products marked conforms to every requirements of the specification.
 - 3.1** Packing and marking on the containers shall be done as per the provision of IS 1166:1986. In addition, the following details shall be marked on each container:
 - a) BIS Licence No. CM/L _____.
 - b) BIS website details i.e –“For details of BIS certification please visit www.bis.gov.in”
- 4. CONTROL UNIT** – For the purpose of this scheme, all the tins of condensed milk of one type filled from storage tank shall constitute a control unit.
 - 4.1** A composite sample, prepared by taking equal quantity of material from each shift, shall be tested for the requirements given in Table 1 and the control unit shall be deemed satisfactory if the composite sample comply with all the requirements prescribed in Table 1. If the composite sample fail to satisfy any of the requirements given in Table 1, the material represented by the sample shall be considered unfit for the purpose of marking
- 5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control specified therein, shall be carried out on the whole production of factory covered by this Scheme and appropriate records and charts maintained in accordance with paragraph 2 above . A separate record shall be maintained for requirement mentioned in clause 4.1.1, 4.1.2, 4.1.3, 4.1.6, and 4.1.7 of IS 1166:1986.
 - 5.1** All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.

- 6. HYGIENIC CONDITIONS** - Where applicable, hygienic conditions shall be complied in day to day production and quality control activity. Schedule for each activity for this purpose shall be displayed prominently in the factory premises and records of compliance shall be maintained.

- 7. REJECTIONS** – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of the provisions of BIS Act,2016. A separate record shall be maintained giving information relating to the rejection of the control units of the condensed milk, partly skimmed and skimmed condensed milk not conforming to the specification and the method of their disposal. Such material, if packed, shall in no case be stored together with that conforming to the specification.

**Table 1 LEVELS OF CONTROL
(Scheme of Inspection and Testing)**

(1)				(2)	(3)		
Test Details				Test equipment requirement R:required (or) S: Sub-contracting permitted	Levels of Control		
Clause	Requirements	Test Method			No. of Samples	Frequency	Remarks
		Clause	Reference				
4.1.4	Colour	4.1.4	IS 1166	R	One	Each Control Unit	
4.1.5	Flavour & Taste	4.1.5	- do-	R	- do -	- do -	
4.1.8	Size of Lactose Crystals	App A	- do-	R	- do -	-do-	
4.1 & Table 1	Total Milk Solid	App B	- do-	R	- do-	-do-	
-do-	Fat Content		IS 11762	R	- do-	-do-	
-do-	Sucrose	App C	IS 1166	R	-do-	-do-	
-do-	Titratable Acidity (as lactic acid)	App D	- do-	R	-do-	-do-	
-do-	Accelerated Storage Test	App E	- do-	R	-do-	-do-	
4.1.10	Microbial Specifications:						
4.1.10.1	Shigella & salmonella	-	IS 5887(Pt 3)	S	One	Once in a month	Shall be got tested from outside BIS approved lab
4.1.10.2	Coliform Count	-	IS 5401	R	One	Once in a month	

4.1.10.3	Yeast and mould count	-	IS 5403		One	Each control unit	
4.1.10.4	Coagulase ^{+e} Staphylococcus Aureaus	-	IS 5887(Pt 2)	S	One	Once in a month	Shall be got tested from outside BIS approved lab
4.1.10.5	E-Coli	-	IS 5887(Pt 1)	R	One	Each control unit	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory.

Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

Note-2: The control unit and levels of control as decided by the Bureau are obligatory to which the licensee shall comply with.