



**PRODUCT MANUAL FOR
PARTLY SKIMMED MILK POWDER**

According to IS 14542:1998

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	:	IS 14542:1998
a)	Title	:	Partly Skimmed Milk Powder
b)	No. of amendments	:	01
2.	Sampling Guidelines		
a)	Raw material	:	Packing material for retail packing (Metal containers – IS 11078/ Food grade plastic – IS 10171) Packing material for bulk packing (Polyethylene bags of food grade plastic with min. thickness of 0.05 mm – IS 10171. Subsequent encasement of PE bags in sacks –IS 11824/ multi-walled kraft paper
b)	Grouping Guidelines	:	Not Applicable
c)	Sample Size	:	2 x 500 g
3.	List of Test Equipment	:	Please refer ANNEX- A
4.	Scheme of Inspection and Testing	:	Please refer ANNEX- B
5.	Possible tests in a day	:	Description, Flavour and Taste, Moisture, Total Solids, Insolubility Index, Milk Fat, Total Ash, Titratable Acidity
6.	Scope of the Licence :		
	Licence is granted to use Standard Mark as per IS 14542:1998 with the following scope:		
	Name of the product	Partly Skimmed Milk Powder	
	Type	I and II	
	Any other aspect regard as per the standard	Roller or spray dried	

ANNEX-A**List of Test Equipment*****Major test equipment required to test as per the Indian Standard***

Sr. No.	Test Equipment	Test used in with clause reference
1.	Not applicable	Description { Clause 5.1 }
2.	Not applicable	Flavour and taste { Clause 6.4 }
3.	Not applicable	Hygienic conditions { Clause 6.5 } cross-referred to IS 2491
1.	Analytical Balance, Hot Air Oven, Flat Bottom Moisture Dishes with cover, Silica gel, Desiccator	Moisture % { Clause 6.7 (Table 1) (i) }
2.	Analytical Balance, Hot Air Oven, Flat Bottom Moisture pure nickel Dishes with cover, Silica gel, Desiccator	Total Solids { Clause 6.7 (Table 1) (ii) }
3.	Analytical balance, Centrifuge, Distillation or evaporation apparatus, Water bath, Drying Oven, Mojonnier-type fat-extraction flasks, Boiling flasks (flat-bottomed), Conical flasks, Measuring cylinders, Pipettes, Diethyl ether, Ammonia solution, Petroleum ether, Ethanol, Congo red solution, Diethyl ether, Light petroleum	Milk Fat % { Clause 6.7 (Table 1) (iii) }
4.	Thermometer, Water bath, Analytical balance, Measuring cylinder, Mixing Jar (clover-leaf pattern), Scoop, Brush, Electric mixer, Stop watch, Spatula, Centrifuge with tubes, Suction attached to water pump, Stirring rod, Magnifying lens, Silicone antifoaming agent	Insolubility index { Clause 6.7 (Table 1) (iv) }
5.	Analytical Balance, Muffle Furnace, Flat-Bottom Dish, Tongs, Dessicator	Total ash (on dry basis) % { Clause 6.7 (Table 1) (v) }
6.	Analytical balance, Burette, Pipette, Measuring cylinder, Conical flask, Sodium hydroxide, Cobalt sulphate heptahydrate, Phenolphthalein	Titrateable acidity { Clause 6.7 (Table 1) (vi) }
7.	Incubator, Autoclave, Dry heat sterilization oven, pH meter, Electronic Balance, Laminar air flow, Conductivity meter, Water bath, Plate Count Agar, Pipette, Petri dishes	Bacterial count (Clause 6.6.1)
8.	Incubator, Autoclave, Dry heat sterilization oven, pH meter, Electronic Balance, Laminar air flow, Conductivity meter, Water bath, Crystal violet neutral red bile lactose (VRBL) agar or Lauryl sulphate tryptose broth, Brilliant Green Bile Broth, Test tubes, Durham tubes	Coliform count (Clause 6.6.2)

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. LABELLING AND MARKING – The material shall be packed as per clause 4 of IS 14542:1998. Marking to be done as per clause 5.1 of IS 14158:1994.

4. CONTROL UNIT – For the purpose of this Scheme, the total quantity of partly skimmed milk powder manufactured continuously at a time in a period of 24 hours shall constitute a control unit.

5. Partly Skim Milk Powder shall be the material prepared by spray/Roller drying of fresh skimmed milk of cow or buffalo or a combination thereof. The additives if used shall be as per Clause 6.2 and 6.3 of IS 14542:1998.

5.1 As per clause 6.2 of IS 14542:1998, Type I of product may contain added calcium chloride, citric acid and sodium citrate, sodium salts of orthophosphoric acid and polyphosphoric acid (as linear phosphate), not exceeding 0.3 percent by mass of the finished product. Butylated hydroxyanisole (HHA) not exceeding 0.01 percent by mass of the finished product, may be added.

5.2 As per clause 6.3 of IS 14542:1998, Type II of the product may also contain sodium bicarbonate as a neutralizer provided that the resultant product is labelled as 'Unfit for Direct Consumption'. The amount of food additives including neutralizers added shall, however, be same as prescribed under clause 6.3.

6. LEVELS OF CONTROL - The tests as indicated in column 1 of [Table 1](#) and the levels of control in column 3 of [Table 1](#), shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

7. HYGIENIC CONDITIONS - The material shall be manufactured, packed stored and distributed under hygienic conditions (See IS 2491). All the processing equipments should be properly cleaned and care should be taken to prevent infestation.

8. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1: LEVELS OF CONTROL

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or)S: Subcontracting permitted	Levels of control		
Cl.	Requirements	Test Methods			No. of sample	Frequency	Remarks
		Clause	Reference				
5.1	Description	5.1	IS 14542	R	One	Every half an hour	See Note-3
6.4	Flavour and Taste	6.4	-do-	R	One	-do-	-do-
6.7 & Table 1	Moisture	-	IS 11623 & IS 16072*	R	One	-do-	-do-
-do-	Total solids	-	-do-	R	Two	Each control unit	See Note-4
-do-	Milk Fat	-	IS 11721	R	Two	-do-	-do-
-do-	Insolubility index	-	IS 12759	R	Two	-do-	-do-
-do-	Total ash (on dry basis)	Annex B	IS 14433	R	Two	Every 7 th control unit	See Note-5
-do-	Titrateable acidity	-	IS 11766	R	Two	Each control unit	See Note-4
6.6.1	Bacterial count	-	IS 5402	R	Two	-do-	-do-
6.6.2	Coliform count	-	IS 5401	R	Two	-do-	-do-

* IS 16072 for routine analysis & IS 11623 for referee method.

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled 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.

Note-3: In case the production is started after the shutdown of the plant, for more than a week's time, for any reason, it shall be ensured, before packing and dispatching the material with the Standard Mark, that the material is tested for conformity to all the requirements of the specification.

Note-4: A sample shall be taken at the packing stage after every half an hour which shall be examined visually for appearance, colour, absence of lumps and extraneous matter; examined by organoleptic methods for flavour and taste; and analysed for moisture content. If the sample does not conform to the specification in any one or more of these requirements, the material manufactured during the half an hour prior to drawal of sample shall either be rejected or reprocessed for its conformity to these requirements of the specification.

Note-5: Two samples shall be drawn from every control unit – one during the first half of the packing period and other during the second half of the packing period. These samples shall be individually tested for total solids, insolubility index, milk fat, titratable acidity, bacterial count, and coliform count. If any or both the samples fail to conform to anyone or more of these requirement(s) as given in the specification, the entire material in the control unit shall not be marked. The material may, however, be reprocessed and the defect(s) rectified. Such reprocessed material when tested again shall conform to all the requirements of the specification.

Note-6: Two samples from every seventh control unit (starting from a control unit chosen at random) shall be tested for total ash. If any one or both the samples fail to satisfy the requirement, the corresponding control unit shall not be marked. The material in the control unit may however, be reprocessed and the defect rectified. Such reprocessed material when tested again shall conform to all the requirements of the specification. Two samples from every subsequent control unit shall be tested for the characteristic where failure has occurred till seven consecutive control units are found meeting the specification requirements whereupon the original frequency of testing may be resumed.