



**PRODUCT MANUAL FOR
Plastics Feeding Bottles
According to IS 14625:2015**

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 14625:2015
	Title	:	Plastics Feeding Bottles
	No. of Amendments	:	2
2.	Sampling Guidelines:		
a)	Raw material	:	Please refer ANNEX –A
b)	Grouping guidelines	:	A Sample (of requisite quantity) of feeding bottles made from each type of material (PP/PES etc.) used for making plastics feeding bottles shall be subjected to testing for considering grant of licence/inclusion of bottles made from that type of material
c)	Sample Size	:	60 bottles
3.	List of Test Equipment	:	Please refer ANNEX –B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX –C
5.	Possible tests in a day :	:	Please refer ANNEX –D
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 14625:2015 with the following scope:		
	Name of the product	Plastics Feeding Bottles	
	Material	Polypropylene (PP) / Polyethersulfone (PES) etc.	

ANNEX A
Raw Materials

For material used for plastics feeding bottles excluding teats, each consignment to be accompanied with supplier's test certificates as per Cl. 4.1.

Rubber teats shall conform to IS 3565 and in case teats are made of silicone teats, these shall be manufactured from non-toxic and food grade material and each consignment to be accompanied with supplier's test certificates as per Cl. 4.2.

For pigments and colourants used in printing, each consignment to be accompanied with supplier's test certificates or third party lab test report as per IS 9833.

ANNEX B
List of Test Equipment

Major test equipment required to test as per the Indian Standard

Sr. No.	Test Equipment	Tests used in with Clause Reference
1	<p>Micrometer/screw gauge, fitted with ball point tips or dial caliper gauge fitted with spherical anvils giving an accuracy of measurement of 0.02 mm</p> <p>Cutting Tools</p>	Wall Thickness (Cl. 5.1.3)
2	Beakers and Measuring Cylinders	Capacity (Cl. 5.1.4)
3	Sodium Bicarbonate, Conc. Sulphuric Acid, Analytical Balance and Glass ware	Permanency of Pigment [Cl. 5.1.4.2 a)]
4	<p>Apparatus/Reagents for Migration of elements</p> <ul style="list-style-type: none"> • Water bath, able to maintain the temperature of the test mixture at 37 ± 2 oC and having the means to agitate the test mixture. • pH meter, with an accuracy of ± 0.2 pH units • Membrane filter, with a pore size of $0.45 \mu\text{m}$ • Centrifuge, capable of centrifuging at $5\ 000 \pm 500$ rpm. • Analytical Balance • Hydrochloric acid and other chemicals and laboratory reagents <p>Apparatus/Reagents for determination of quantity of migrated elements</p> <p>Inductively coupled plasma optical emission Spectrophotometer (ICP-OES) along with necessary laboratory apparatus and reagents as per IS 3025 (Part 2):2019</p> <p>OR,</p> <p>Atomic Absorption Spectrophotometer and associated apparatus and reagents as per IS 15303 (Antimony and Selenium), IS 3025 (Part 37) – (Arsenic), IS 3025 (Part 48) – Mercury, IS 3025 (Part 41)- (Cadmium), IS 3025 (Part 47) – (Lead), and IS 1699 – (Barium)</p>	Migration of Certain Elements (Cl. 5.2.1)
5	<ul style="list-style-type: none"> • Circulating Air Oven capable of housing at least 15 containers and providing temperature of at least $60 \pm 1^\circ\text{C}$ • Conditioning chamber capable of conditioning 	Environmental Stress-Crack Resistance (Cl. 5.3.1)

	<p>at least 15 containers at a temperature of 27±2°C and 65±5% RH</p> <ul style="list-style-type: none"> • Any environmental stress cracking reagent • Heat sealing equipment, closures • Plastic bags, rubber band/seal/tape etc. 	
6	Integration ball type light transmittance measurement apparatus as per Annex C or Apparatus as per ASTM 1003	Transparency (Cl. 5.3.2)
7	Blotting paper, Closures	Leakage Test (Cl 5.3.3)
8	Flat horizontal surface of steel or smooth concrete	Drop Test (Cl 5.3.4)
9	Boiling water and ice water arrangement	Ageing Resistance (Cl. 5.3.5)
10	Compression Jig with 2 kgf load Room Thermometer with LC 1°C	Compressive Deformation Resistance (Cl.5.3.6)
11	Simulant: Distilled water (to simulate the product) Arrangement to heat the samples to 40±2°C , thermometer Cold Water/Hard tissue paper	Product Resistance of Printed Containers (Cl 5.3.7)
12	<ul style="list-style-type: none"> • Simulants: n-heptane and distilled water • Oven/water bath/ pressure cooker/autoclave • Electric hot plate with temperature control regulator • Water Bath/Electrical Oven with digital Temp controller (0-150 °C, LC 0.1 °C) • Stainless steel evaporating dish of 100 ml capacity, stainless steel tongs, SS pins • Dessicators • Analytical Balance (LC 0.1 mg) • Pyrex Beakers, and other laboratory glassware and reagents 	Migration Test (Cl.5.3.8)

The list above is indicative in nature and may not be taken as exhaustive

ANNEXURE-C

**SCHEME OF INSPECTION AND TESTING for
Plastics Feeding Bottles
According to IS 14625:2015**

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 indelibly marked on each plastics feeding bottle and its packaging along with the other marking details as required by the standard. Packing and Marking shall be done as per the provisions of the Indian Standard. The following shall be marked in addition –

a) The BIS licence number

b) The phrase 'Please see www.bis.gov.in for BIS certification details'. *

**In case of space constraints, (b) may be marked only on the package*

4. CONTROL UNIT – For the purpose of this scheme, plastic feeding bottles of same nominal capacity and of same material manufactured from the same consignment of raw material in a day/shift (if production is in more than one shift in a day) shall constitute one control unit.

5. 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.

6.2 All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.

6. 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

Test Details				Levels of Control			
Cl.	Requirement	Test Methods		Test equipment requirement R: required (or)S: Sub-contracting permitted	No. of Samples	Frequency	Remarks
		Clause	Reference				
4.1	Materials	4.1	IS 14625	S	One sample of each type of material	Each consignment	See Note 3
4.2	Teats	4.2	-do-	S	-do-	-do-	-do-
5	REQUIREMENTS						
5.1	Physical Requirements						
5.1.1	Description	5.1.1	-do-	R	One	Each hour	
					1% of bottles in each consignment	Each consignment	
5.1.2	Manufacture, Workmanship, Finish and Appearance	5.1.2	-do-	R	One	Each hour	
					1% of bottles in each consignment	Each consignment	
5.1.3	Wall Thickness	4.5	IS 2798	R	One	Each hour	
					1% of bottles in each consignment	Each consignment	
5.1.4.1	(Brimful) Capacity	5.1.4.1	IS 14625	R	One	Each hour	
					1% of bottles in each consignment	Each consignment	
5.1.4.2	Capacity Scale	5.1.4.2	IS 14625	R	One	Each hour	
					1% of bottles in each consignment	Each consignment	

5.1.4.2	Permanency of pigment	Annex B	IS 14625	R	Three	Every seventh control unit	For bottles with printed scale/graduations
5.2	Chemical Requirements						
5.2.1	Migration of Certain Elements	5.2.1	IS 14625				
i)	Antimony		IS 15303/ IS 3025 (Part 2)	S	One	Every 3 months	
ii)	Arsenic		IS 3025 (Part 37) /IS 3025 (Part 2)	S	-do-	-do-	
iii)	Chromium		IS 3025 (Part 52) IS 3025 (Part 2)	S	-do-	-do-	
iv)	Mercury		IS 3025 (Part 48) IS 3025 (Part 2)	S	-do-	-do-	
v)	Cadmium		IS 3025 (Part 4) IS 3025 (Part 2)	S	-do-	-do-	
vi)	Lead		IS 3025 (Part 4) IS 3025 (Part 2)	S	-do-	-do-	
vii)	Barium		IS 1699/ IS 3025 (Part 2)	S	-do-	-do-	
viii)	Selenium		IS 15303/ IS 3025 (Part 56) IS 3025 (Part 2)	S	-do-	-do-	
5.2.2	Pigments and colourants used in the printing		IS 9833	S	One	Each consignment	See Note 3
5.3	Performance Requirements						
5.3.1	<i>Environmental Stress-Crack Resistance</i>	Method 1	IS 8747	S	Five	Every 7 th control unit	
5.3.2	<i>Transparency</i>	Annex C	IS 14625	S	Three	Once in two months for each type of material (PP/PES etc.) or for each	

						consignment whichever is earlier	
5.3.3	<i>Leakage Test</i>	5.3.3	-do-	R	Ten	Each control unit	
5.3.4	<i>Drop Test</i>	Annex D	-do-	R	Three	Each control unit	
5.3.5	<i>Ageing Resistance</i>	5.3.5	-do-	R	Three	Every third control unit	
5.3.6	<i>Compressive Deformation Resistance</i>	Annex E	-do-	R	-do-	-do-	
5.3.7	<i>Product Resistance of Printed Containers</i>	14	IS 2798	R	-do-	-do-	
5.3.8	<i>Migration Test</i>		IS 9845	R	One	Every third control unit with n-heptane as stimulants	
					One	Once in a fortnight with distilled water as stimulant.	

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: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification to BO head.

Note-3: Each consignment of material, teats and pigment used in manufacture of plastics feeding bottles has to be accompanied with supplier's test certificate or test report issued by a third party laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau indicating conformity to the requirements of the standard. No testing is required if the material or teats or pigment is ISI marked.

Note-4: Physical requirements shall be checked either hourly or consignment wise against a drawing incorporating material, design, wall thickness, shape and capacity for each capacity which shall be prepared & endorsed by both purchaser and manufacturer.

ANNEX D
LIST OF TESTS POSSIBLE IN A DAY

- a) Wall thickness (Cl. 5.1.3)
- b) Capacity (Cl. 5.1.4)
- c) Transparency (Cl. 5.3.2)
- d) Drop Test (Cl. 5.3.4)
- e) Compressive Deformation Resistance (Cl. 5.3.6)