



उत्पाद मानुयल

आइसोप्रोपिल अल्कोहल, खाद्य ग्रेड

11686:1997 के अनुसार

**PRODUCT MANUAL
FOR ISOPROPYL ALCOHOL, FOOD GRADE
ACCORDING TO IS 11686:1997**

भारतीय मानक ब्यूरो 2018 विनियम (अनुरूपता मूल्यांकन)की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरणके प्रचलन में रीति और पारदर्शिता के सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय शाखा/ कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाण पत्र प्राप्त करने के इच्छुक भावी/लाइसेन्स आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

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 license/certificate.

1	उत्पाद Product	:	IS 11686: 1997
	शीर्षक Title	:	ISOPROPYL ALCOHOL, FOOD GRADE-SPECIFICATION
	संशोधन संख्या No. of Amendments	:	NIL
2	नमूनाकरण दिशा निर्देश Sampling Guidelines:		
A	कच्चा माल Raw material	:	No specific requirement
B	समूहिकरण दिशा निर्देश Grouping guidelines	:	NA – No varieties specified in standard
C	नमूने का परिमाण Sample Size	:	Minimum 100 ml
3	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex-A
4	निरीक्षण व परीक्षण स्कीम	:	Please refer Annex-B

	Scheme of Inspection and Testing		
5	एक दिन में संभावित परीक्षण Possible tests in a day :	:	All tests
6	लाइसेन्स का कार्यक्षेत्र / Scope of the Licence:		
	License is granted to use Standard Mark as per IS 11686: 1997 with the following scope:		
	उत्पाद का नाम Name of the product		Isopropyl alcohol, Food grade

BUREAU OF INDIAN STANDARDS
Manak Bhawan, 9, Bahadur Shah Zafar Marg,
New Delhi – 110002

ANNEX – A
TO THE PRODUCT MANUAL FOR
ISOPROPYL ALCOHOL , FOOD GRADE
ACCORDING TO IS 11686:1997
List of test equipment

Sl. No	Tests used in with Clause Reference	Test Equipment
1	Purity as C ₃ H ₈ O; Table 1 (Cl.4) Reference Method A-1 of IS 11686: 1997	REAGENT - Isopropyl alcohol - Acetone - Di isopropyl alcohol 2-Butanol APPARATUS - Gas Chromatography with Flame ionization Detector. - Colum 1.8 m length, 6 mm diameter steel column packed with 10 percent PEG, 400 on chromosorb w(60/80 mesh) or equivalent. - Syringe (10 ul) Carrier Gas - Helium (Pure Grade)
2	Relative Density at 27/27°C ; Table 1 (Cl.4) Reference Method A-2 of IS 11686: 1997	50 ml Capacity Relative Density bottle, of Renault type - Thermometer, Least Count : 0.5° C - Water Bath - Filter Paper - Weigh balance
3	Colour (on platinum-cobalt scale); Table 1 (Cl.4) Reference Method A-3 of IS 11686: 1997	REAGENT - Cobalt chloride - Hydrochloric acid - Potassium chloroplatinate APPARATUS - Spectrophotometer. - Spectrophotometer cells - Nessler tubes.

4	Distillation Range; Table 1 (Cl.4) Reference IS 1448(P-18)	Apparatus: • Distillation Flasks ; Distillation flask, 125 mL • Condenser and Cooling Bath: 560 mm $\pm$ 5 mm length, 14 mm in outside diameter, • Metal Shield or Enclosure for Flask: 480 mm high, 280 mm long, 200 mm wide, made of sheet metal of approximately 0.8 mm. • Heat Source: Gas burner/Electric heater • Thermometer or temperature indicator Flask Support: type1(for burner)/type2 for electric heater • Graduated Cylinder: Measuring cylinder, 100 mL, complete with metal base, without Schell bach strip Graduated cylinder, 5 mL, for measuring distillation residue with funnel-shaped opening • Pt100 sample temperature sensor Centering holder for Pt100 sample temperature sensor. Holder for Pt100 sample temperature sensor. • Cleaning Cleaning wire with grip, 100 cm Cleaning felt. • Stopper Silicone stopper Boiling stones against boiling retardation • Barometer, levelling device, centering device
5	Acidity (as CH ₃ COOH); Table 1 (Cl.4) Reference Method A-4 of IS 11686: 1997	Reagent • Rectified Spirit 95% • Phenolphthalein Indicator • Standard Sodium Hydroxide Solution – 0.1N APPARATUS • 50 ml Burette • 1 ml Graduate Pipette • 50 ml Measuring cylinder • Weigh balance
6	Non-Volatile matter; Table 1 (Cl.4) Reference Method A5 of IS 11686: 1997	APPARATUS • Platinum or borosilicate or silica crucible of 150 ml capacity. • Water –bath with controlling temperature • Oven with controlling temperature • Measuring cylinder 100 ml capacity • Desiccators • weigh balance

1 - vii	Aldehydes and Ketones (as acetone); Table 1 (Cl.4) Reference Method A-6 of IS 11686: 1997	Reagent • Standard Sodium Hydroxide Solution – 0.1N • Carbonyl Free Ethanol • 2,4 Di nitro phenyl hydrazine • Hydrochloric acid • Bromophenol Blue • hydroxylamine hydrochloride APPARATUS • Weigh balance • 50 ml measuring cylinder • 5 ml Graduate pipette • Reflux Column (300*25 mm) • 100 ml volumetric flask • 20 ml pipette • 5 ml Volumetric Pipette • 200 ml Volumetric flask • Water Bath • 25 ml Volumetric Pipette • 250 ml conical flask
1 - viii	Substances reducing permanganate; Table 1 (Cl.4) Reference Method A-7 of IS 11686: 1997	Reagent • Potassium Permanganate Solution – 0.1N APPARATUS • Glass - Stoppered Cylinder – 50ml capacity.
1-ix	Heavy metals; Table 1 (Cl.4) Reference Method A-8 of IS : 11686: 1997 tested as per IS 1699 (clause 16)	Reagent • Nitric acid 10% • Ammonia solution • Hydrochloric acid 10% • Lead nitrite solution • Sulfuric acid 94.5 to 95.5% • Hydrogen sulfide APPARATUS • Crucible with lid • Weigh balance • Steam bath • Glass evaporating dish • Nessler tube – 50ml • Measuring cylinder 50 ml • 5 ml, 10 ml pipettes • Muffle furnace • pH paper • Litmus paper

1 - x	Moisture; Table 1 (Cl.4) Reference Method A-9 of IS : 11686: 1997 tested as per IS 2362	APPARATUS • Automatic Burette : 10 to 25 ml capacity with a fine pointed tip and graduations of 0.05 • Titration Vessel : 100 ml capacity • Electrode : Double platinum • Magnetic stirrer with PTFE coated stirring bar. • Electrometric end point detection device utilizing a micrometer • Glass syringe, suitable capacity. REAGENTS • Methanol • 2-Methoxyethanol (Ethylene Glycol Monomethyl Ether) • Iodine • Pyridine • Karl Fischer Reagent • Sodium Tartrate Crystalline • Aluminum Sodium Silicate/Activated Silica Gel • Silicone Base Grease
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This is an indicative list and may not be taken as being exhaustive

ANNEX B
TO THE PRODUCT MANUAL FOR
ISOPROPYL ALCOHOL, FOOD GRADE
ACCORDING TO IS 11686:1997
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 and implement a calibration plan for the test equipments.
- 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 provided always that material so marked conform to requirements of the specification.
 - 3.1** The information as mentioned under clause 5.3 of IS 11686:1997 shall be legibly and indelibly marked on the label of the container. In addition, the following shall be incorporated on each container:
 - (i) BIS License Number CM/L—and
 - (ii) 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, the quantity of the material produced continuously over a period of one day or part thereof shall constitute a 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.
 - 5.1** All the production which conforms to the Indian Standards and covered by the license 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)
(Para 5 of Scheme of Inspection and Testing)

SI No.	(1)				(2)	(3)		
	Test Details				Test equipment requirement R: required (or) S: Subcontracting permitted	Levels of Control		
	Cl.	requirement	Test method			No. of Sample	frequency cy	Remarks
			Clause	Reference				
i)	3	Description	Clause 3	IS 11686:1997	R	One	Each Control Unit	
ii)	4 Table 1(i)	Purity as Propane-2-ol (Iso propyl alcohol)	Clause 4, A-1	IS 11686:1997	R	One	-do-	
iii)	4 Table 1 (ii)	Relative Density at 27/27°C	Clause 4 A-2.1,2.2,2.3	IS 11686:1997	R	One	-do-	
iv)	4 Table 1(iii)	Colour (on platinum-cobalt scale)	Clause 4 A- 3.1,3.2.3.3.3.4	IS 11686: 1997	R	One	-do-	
v)	4 Table 1(iv)	Distillation range	--	Method B in [P:18] of IS 1448 Automatic Distillation Unit	R	One	-do-	
vi)	4 Table 1(v)	Acidity (as CH ₃ COOH), g/100 ml	Clause 4, A -4.1,4.2,4.3	IS 11686:1997	R	One	-do-	
vii)	4 Table 1(vi)	Non-volatile matter	Clause 4, A -5.1,5.2	IS 11686:1997	R	One	-do-	

viii)	4 Table 1(vii)	Aldehyde and ketones	Clause 4, A- 6.0,6.1,6.2,6.3	IS 11686:1997	R	One	-do-	
ix)	4 Table 1(viii)	Substances reducing permanganate	Clause 4, A- 7.1,7.2,7.3	IS 11686:1997	R	One	-do-	
x)	4 Table 1(ix)	Heavy metals	Clause 4, A- 8	Clause 16 of IS 1699	R	One	-do-	
xi)	4 Table 1(x)	Moisture	Clause 4, A -9	IS 2362	R	One	-do-	

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 for the approval by BO Head.