


www.bis.gov.in

उत्पाद मैनुअल
पॉलीथर पॉलीओल्स – विशिष्ट
PRODUCT MANUAL
FOR POLYETHER POLYOLS - SPECIFICATION ACCORDING TO IS 18174: 2023

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। इस दस्तावेज़ के उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity 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.

1.	IS No.	:	IS 18174: 2023
	Title	.	Polyether Polyols
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	No specific requirement
b)	Grouping guidelines	:	Please refer ANNEX – A.
c)	Sample Quantity	:	1 kg
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	:	All Tests
6.	Scope of the Licence:		
	"Licence is granted to use Standard Mark as per IS 18174: 2023 with the following scope:		
	Name of the Product		Polyether Polyols
	Grade (s)		Grade 1/Grade 2/Grade 3/Grade 4

ANNEX-A

GROUPING GUIDELINES

1. Each grade intended to be covered in the scope of the licence is to be tested.
2. Scope of licence shall be restricted based on the manufacturing and testing facilities available.
3. During operation of licence, samples of each grade covered in the scope of licence, shall be tested in rotation, to the extent possible

ANNEX B
List of Test Equipment

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests used in with Clause Reference	Test Equipment/Chemical
1.	Water Content, % by weight, Clause 4.1, Table-1, Sl.No. i)	DIRECT ELECTROMERIC TITRATION OR ELECTROMETRIC BACK-TITRATION • Karl Fischer Reagent with pyridine (as per 5.7 of IS 2362) or Non-pyridine based Karl Fischer reagent (as per 5.8 of IS 2362) • Methanol • Automatic Burette • Titration vessel (100 ml) • Amber Coloured reagent bottle • Double Platinum Electrode • Magnetic Stirrer • Electromagnetic end point detection device utilizing a micrometer • Glass Syringe • Sodium tartarate • Weighing Balance • Water Methanol Standard Solution
2.	Hydroxyl Value, mg KOH/g Clause 4.1, Table-1, Sl.No. ii)	Method A (Annex – A of IS 18174) • Auto titrator/Manual Titrator • Analytical Balance • Glass screw thread Erlenmeyer flask • pH electrode with 3 M Potassium Chloride Electrolyte • Hot Plate • Syringe • Magnetic Stirrer and Bar • Phthalic Anhydride • 1-Methylimidazole • 2.5 L amber colour bottle Method B (Annex – A of IS 18174) • Oil bath • Flat bottom reflux flask • Air condenser • Pyridine-phthalic anhydride solution • Sodium Hydroxide • Phenolphthalein Solution (in pyridine) Methods as per ISO 14900: Apparatus: Potentiometric titrator or pH meter Magnetic Stirrer Analytical Balance

		Volumetric Pipette Syringe (2 ml, 5 ml and 10 ml) Hot Plate or oil bath Condenser (West type) 300 ml Conical flask Brown Bottle Reagents: METHOD A (Acetylation) of ISO 14900 • Acetic Anhydride • Dry Pyridine • Imidazole • 0.5M Sodium Hydroxide • Phenolphthalein indicator (Colourimetric Titration) METHOD B (Phthalation) of ISO 14900 • Phthalic Anhydride • Pyridine • Imidazole • Hydrochloric acid • 0.5M Sodium Hydroxide • Phenolphthalein indicator (Colourimetric Titration) • Potassium acid phthalate
3.	Dynamic Viscosity at 25⁰C Clause 4.1, Table-1, Sl.No. iii)	• Single Cylinder Type rotational viscometer • Thermostatic liquid bath • Viscometer support • Beaker • Temperature measuring device

ANNEX C

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: Each Grade of Polyether Polyols manufactured under similar conditions of production in a day shall constitute a control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in Table 1.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING - It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster-based facilities as per guidelines for the utilization of cluster-based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 **TEST RECORDS** - The manufacturers maintaining an in-house laboratory or utilizing common cluster-based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. **PACKING AND MARKING** - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each drum or tanker provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per Cl. 5 of IS 18174: 2023.

3.2 **Additional Marking requirements:** The material shall also be marked with the following additional requirement on each container:

a) "For BIS certification details please visit www.bis.gov.in"

4. **REJECTION** - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		
Clause	Requirements	Test Method		Test equipment requirement R: required (or) S: Sub-contracting permitted	No of Samples	Frequency	Remarks
		Clause	Ref.				
4.1	Water Content	--	IS 2361	R	One	Each Control unit	
4.1	Hydroxyl Value	--	Annex A/ISO 14900	R	One	Each Control unit	
4.1	Dynamic Viscosity	--	IS 13360 (Part 11/Sec 10)	R	One	Each Control unit	