



उत्पाद मैनुअल

2 - ईथाईल हेक्सान-1-आल- विशिष्टि

IS 6971:1998 के अनुसार

PRODUCT MANUAL

2 - Ethyl Hexan-1-ol - Specification

According to IS 6971:1998

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में अभ्यास और पारदर्शिता के संचालन में पारदर्शिता सुनिश्चित करने के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन लाइसेंस/प्रमाणपत्र 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 coherence of practice and transparency in the operation of certification under Scheme-I of the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining a BIS certification license/certificate.

1.	उत्पाद Product	:	IS 6971:1998
	शीर्षक Title	:	2 - Ethyl Hexan-1-ol - Specification
	संशोधनों की संख्या No. of amendments	:	NIL
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirements
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer Annex-A
c)	नमूने का आकार Sample Size	:	1 Kg
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex-B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annex-C

5.	एक दिन में संभावित परीक्षण Possible tests in a day	
	All tests can be done in a day	
6.	लाइसेंस का दायरा /Scope of the Licence:	
	"Licence is granted to use Standard Mark as per IS 6971:1998 with the following scope:	
	Name of the product	2 - Ethyl Hexan-1-ol
	Varieties/Type/Grades etc.	Plasticizer Grade, Industrial Grade

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
NEW DELHI-110002

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 EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

The list above is indicative only and may not be considered exhaustive.

Sl.no	Tests Used In With Clause Reference	Test Equipment/Chemical
1	Description Cl 4.1	Visual observation
2	Colour; Hazen Units; Cl: 4.2, Table-1, Sl. No. i)	Colour Comparison Tubes, Colour Comparator, Spectrophotometer, Spectrophotometer Cells, Cobalt Chloride Hexahydrate, Hydrochloric Acid, Chloroplatinic Acid or Potassium Chloroplatinate. Semi micro burette, Volumetric flasks, Nessler tubes
3	Relative Density; 27°C/27° C; Cl: 4.2, Table-1, Sl. No. ii)	Relative Density Bottle- 25 ml capacity, Water Bath (capable of maintaining 27.0 + 0.2°C), Thermometer (LC-0.1°C or 0.2°C), Distilled Water, weighing balance
4	Distillation Range; (a) Initial Boiling point 760 mm Hg Min, (b) Dry point at 760 mm Hg; Cl: 4.2, Table-1, Sl. No. iii)	Distillation flask, Liebig condenser, Thermometer (L.C - 1°C), Draught screen, retort stand, Distillation receiver, gas burner or electric heater.
5	Water Content; % by Mass; Cl.4.2, Table-1, Sl. No. iv)	Methanol, Magnesium turnings, Iodine, Anhydrous Aluminium Sodium Silicate or activated silica gel, Ethylene Glycol Monomethyl ether, Pyridine, Acetic acid, Chloroform, Sulphur dioxide, Karl Fischer reagent, Sodium Tartarate- Crystalline, Silicon base grease, Automatic burette (10-25ml capacity), Titration vessel (100ml capacity), Reagent bottle for Karl Fischer reagent, Double Platinum electrode, Magnetic Stirrer with PTFE coated stirring bar, Electrometric end point detection device utilizing a micrometre, Glass syringe, Small glass tube
6	Acidity (As acetic acid); % by Mass; Cl.4.2, Table-1, Sl. No. v)	Sodium Hydroxide Solution, Hydrochloric Acid, Phenolphthalein Indicator, Neutralized Isopropyl Alcohol, weigh balance (LC = 0.1g), Microburette
7	Aldehydes & Ketones (As carbonyl group); % by Mass; Cl: 4.2 Table-1, Sl. No. vi)	Spectrophotometer, with 10 mm path cells, water bath, Carbonyl-Free Methanol, 2,4-Dinitrophenylhydrazine Solution, Potassium Hydroxide Solution, Methyl Iso Butyl Ketone (MIBK) weigh balance (L.C=0.1 mg), volumetric flasks-25 ml, 2ml pipette, 2 to 3 feet fractionating column, hydrochloric acid
8	Sulfuric Acid Test; Colour; Hazen Units; Cl: 4.2 Table-1, Sl. No. vii)	Nessler cylinders of 50 ml, Automatic Burette -10 ml, Sulphuric acid, water bath, conical flask, aluminium foil
9	Purity, % Mass; Cl: 4.2, Table-1, Sl. No.viii)	Gas Chromatograph as per Annexure G with hydrogen flame ionization detector, Nitrogen Chromatographic grade, pure compound 2-Ethyl-4-Methyl Pentanol.

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 the quantity of the 2 - Ethyl Hexan-1-ol of the same grade produced in a single batch 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/empanelled 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 the container transporting 2 - Ethyl Hexan-1-ol, provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 If material is supplied in tank cars, tank trucks, container ships etc. the Standard Mark as given in Schedule of the licence and Licence Number (i.e. CM/L) shall be incorporated on a test certificate to be provided along with each tank car/tank truck/container ship as per the format at Appendix-1 enclosed, provided always that the product thus marked conforms to all the requirement of the specification. Packing shall be done as per provisions of Indian Standard and the marking details as per IS 6971:1998 shall also be indicated on the test certificate.

3.3 Additional Marking requirements: The material shall also be marked with the following additional requirement on the container transporting 2 - Ethyl Hexan-1-ol:

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 so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1
Levels of controls

[1]				[2]	[3]		
Test Details				Test equipment requirement. R: required (or)S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
4.1	Description	4.1	IS 6971: 1998	R	Firm to have adequate in-process controls to check compliance of this parameter as given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.2 and Table 1	i)Color; Hazen Units	---	IS 8768: 2000	R	1	Each Control Unit	-
	ii)Relative Density; 27°C/27° C	Annex-A	IS 6971: 1998	R	1	Each Control Unit	-
	iii)Distillation Range; Initial Boiling point 760 mmHg Min, Dry point at 760 mmHg	Annex-B	IS 6971: 1998	R	1	Each Control Unit	-
	iv)Water Content; % by Mass	Annex-C	IS 6971: 1998	R	1	Each Control Unit	-
	v) Acidity (As acetic acid); % by Mass;	Annex-D	IS 6971: 1998	R	1	Each Control Unit)	-
	vi) Aldehydes & Ketones (As carbonyl group); % by Mass;	Annex-E	IS 6971: 1998	R	1	Each Control Unit	-
	viii) Sulfuric Acid Colour; Hazen Units;	Annex-F	IS 6971: 1998	R	1	Each Control Unit	-
	viii) Purity, % Mass	Annex-G	IS 6971: 1998	R	1	Each Control Unit	-

Appendix- 1

XYZ COMPANY
(Registered Office Address and works address)
TEST CERTIFICATE
2 - Ethyl Hexan-1-ol - Specification as per IS 6971: 1998

BIS
Standard
Mark

TEST CERTIFICATE No.

Date.....

To M/s _____

We certified that the material described below fully conforms to IS **6971:1998**. The properties of the product, as tested in accordance with the Scheme of Inspection and Testing contained in the BIS Certification Marks License No. CM/L_____are as indicated below against each order No.

(PLEASE REFER TO IS **6971:1998** FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order No.& Date	Control Unit No.	Quantity in tons	Description	Requirements							
				Colour	Relative density	Distillation range IBP DP	Aldehyde s & Ketones (As carbonyl)	Acidity (otherthan CO2) (as CH3COOH	Water content	Sulfuric Acid Colour; Hazen Units	Purity, % Mass

REMARKS
WAGON
NO.
TRUCK NO.

FOR XYZ COMPANY

