



उत्पाद मैनुअल
एथिलीन ऑक्साइड की विशिष्टि
5573 : 1984 के अनुसार

PRODUCT MANUAL FOR
SPECIFICATION FOR ETHYLENE OXIDE
ACCORDING TO IS 5573 : 1984

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम 2018 की स्कीम-I के तहत यह उत्पाद मैनुअल प्रमाणीकरण की संचालन रीति में सुसंगतता और पारदर्शिता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी 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 licence/certificate.

1.	उत्पाद Product	:	IS 5573 : 1984
	शीर्षक Title	:	एथिलीन ऑक्साइड की विशिष्टि Specification for Ethylene Oxide
	संशोधनों की संख्या No. of Amendments	:	0 Nil
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines:		
a)	कच्चा माल Raw material	:	No specific requirement
b)	समूहीकरण दिशानिर्देश Grouping guidelines	:	Not applicable
c)	नमूने का परिमाण Sample Size	:	500 ml
3.	परीक्षण उपकरणों की सूची	:	कृपया Annex-A देखें

	List of Test Equipment	Please see Annex – A
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	कृपया Annex-B देखें Please see Annex – B
5.	एक दिन में संभावित परीक्षण Possible tests in a day :	
	All Tests	
6.	लाइसेन्स का कार्यक्षेत्र / Scope of the Licence:	
	IS 5573 : 1984 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per 5573 : 1984 with the following scope:	
	उत्पाद का नाम Name of the product	Ethylene Oxide

ANNEX – A
TO PRODUCT MANUAL FOR
SPECIFICATION FOR ETHYLENE OXIDE
ACCORDING TO IS 5573 : 1984
LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

Sr. No.	Tests used in with Clause Reference	Test equipment
1.	Colour, Cl. 2.2, Table 1, Sl. No. (i)	Nessler Cylinders, 100 ml capacity One-Mark Volumetric Flasks —250 and 500 ml capacities Cobaltous Chloride Hexahydrate Hydrochloric Acid Chloroplatinic Acid (Prepared by dissolving platinum in aqua regia in glass/porcelain dish by heating on boiling water bath) Distilled water Pipettes
2.	Aldehydes (as acetaldehyde content, Cl. 2.2, Table 1, Sl. No. (ii)	Refrigerator and Ice Bath Measuring Cylinder Erlenmeyer Flask Burette — 10 ml, 25 ml capacity Pipette – as per Cl. A-3.1.1 Iodine Solution — 0.1 N aqueous Standard Iodine Solution — 0.01 N aqueous Sodium Bicarbonate Sodium Meta Bisulphite Solution 0.05 percent (m/m) Starch Indicator Solution
3.	Moisture content, Cl. 2.2, Table 1, Sl. No. (iii)	Karl Fischer Titration Apparatus with electrometric end point detection (for direct electrometric titration or back titration) Analytical balance, Thermometer, Stoppered glass flask, Volumetric flask and other laboratory glassware Reagents: For Preparation of Karl Fischer Reagent - Methanol, 2-Methoxyethanol (Ethylene Glycol Monomethyl Ether), Iodine, Pyridine, Sulphur Dioxide (Non- pyridine based Karl Fischer Reagents are available commercially and may be used after standardization).

		Sodium Tartarate crystalline, Aluminium Sodium Silicate/Activated Silica Gel Silicone Base Grease
4.	Acidity (as CH ₃ COOH), Cl. 2.2, Table 1, Sl. No. (iv)	Barium Hydroxide Solution Standard Hydrochloric Acid - 0.02 N Phenolphthalein Indicator Solution Volumetric flask CO ₂ free Distilled Water Pipette Conical flask Nitrogen Gas Ice-water bath Weighing balance Water bath
5.	Ionisable chlorides, Cl. 2.2, Table 1, Sl. No. (v)	Microburette Graduated Cylinder Beakers Conical Flask Volumetric Flasks Mercuric Nitrate Solution (0.0141 N) Mixed Indicator Solution Nitric Acid Sodium Hydroxide Solution — 10 g/litre aqueous. Sodium Chloride Solution 0.025 N Chloride free demineralized water Fumehood
6.	Non-volatile matter, Cl. 2.2, Table 1, Sl. No. (vi)	Evaporator — comprising of Vacuum desiccator which can be heated; Infrared lamp with control transformer; Mercury manometer; Safety bottle; and Water jet air pump. Oven Gum Test Dish Measuring Cylinder Desiccator - without drying agent Protective Metal Cage - for the vacuum desiccator. Refrigerator Weighing balance

The above list is indicative only and may not be treated as exhaustive

ANNEX B
TO PRODUCT MANUAL FOR
SPECIFICATION FOR ETHYLENE OXIDE
ACCORDING TO IS 5573 : 1984
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 material shall be supplied in cylinders or in rail tank-cars or road tankers of approved design and of suitable capacity. The Standard Mark, as given in the Schedule of the licence, shall be printed on the label applied and/or incorporated on a test certificate to be provided along with each consignment as per the format at Appendix-1 enclosed, provided always that the product so marked conform to requirements of the specification.

3.1 Packing and Marking shall be done as per the provisions of the Indian Standard. In addition, the following shall be incorporated on label/test certificate :

- i) BIS Licence No. (CM/L.....)
- ii) For details of BIS certification details please visit www.bis.gov.in.

3.2 The cylinders, rail tank-cars and road tankers shall also be suitably labelled as shown in Fig. 1 and 5 of IS 1260 (Part I).

4. CONTROL UNIT – For the purpose of this scheme, the entire quantity of Ethylene Oxide manufactured in a single day or part thereof shall constitute a control unit 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 licence should be marked with Standard Mark.

7. 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)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
2.1	Description	2.1	IS 5573	R	One	Each Control Unit	
2.2	Table 1 Requirements for Ethylene Oxide						
i)	Colour,	A-2	IS 5573	R	One	Each Control Unit	
ii)	Aldehydes (as acetaldehyde content)	A-3	IS 5573	R	One	Each Control Unit	
iii)	Moisture content	A-4	IS 5573	R	One	Each Control Unit	
iv)	Acidity (as CH ₃ COOH),	A-5	IS 5573	R	One	Each Control Unit	
v)	Ionisable chlorides	A-6	IS 5573	R	One	Each Control Unit	
vi)	Non-volatile matter	A-7	IS 5573	R	One	Each Control Unit	
vii)	Ethylene oxide content	A-8	IS 5573	R	One	Each Control Unit	

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 empanelled 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 approval by BO Head.

Appendix-1
TEST CERTIFICATE FORMAT
XYZ COMPANY
TEST CERTIFICATE FOR ETHYLENE OXIDE

TEST CERTIFICATE NO. _____ DATED _____

SUPPLIED TO M/s _____ (Name and Address of Consignee), Supply date -

It is certified that the material described below fully conforms to IS 5573 : 1984.

The properties of the product, as tested in accordance with the Scheme of Inspection and Testing contained in the BIS Certification Marks Licence No. CML _____ are as indicated below against each order no. etc.

(PLEASE REFER TO IS 5573 : 1984 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order no and date	Name of the material	Requirement	Observed Value	Control Unit/Batch Number	Month and Year of Packaging	Quantity	Remarks
		Enclose sheet containing requirement wise observed values of all requirements of the Indian Standards					

The material supplied conforms to specified requirements of IS 5573 : 1984.

REMARKS:

TANK CAR/ ROAD TANKER NO.-
MATERIAL SUPPLIED BY -

Name and Address of manufacturer:

Recognized Trade Mark if any:

BIS Licence Number:

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