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उत्पाद मैनुअल

फॉस्फोरस ऑक्सीक्लोराइड, तकनीकी - विशिष्टि

IS 11657 : 2025 के अनुसार

PRODUCT MANUAL FOR PHOSPHORUS OXYCHLORIDE, TECHNICAL – SPECIFICATION ACCORDING TO IS 11657 : 2025

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन(विनियम, 2018 की योजना -I 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। दस्तावेज़ का 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.	**मानक संख्या** **IS No.**	:	IS : 11657 : 2025
	शीर्षक **Title**	:	फॉस्फोरस ऑक्सीक्लोराइड, तकनीकी - विशिष्टि Phosphorus Oxychloride, Technical – Specification
	संशोधनों की संख्या **No. of amendments**	:	0 Nil
2.	**नमूना दिशानिर्देश** **Sampling Guidelines**		
a)	**कच्चा माल** **Raw material**	:	No specific requirement. Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance.
b)	**समूहीकरण दिशानिर्देश** **Grouping Guidelines**	:	None
c)	**नमूने का परिमाण** **Sample Quantity**	:	500 ml Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of

			Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market).
d)	**परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर** **Parameters to be Declared in Test Request**	:	Name of the product Note: This section indicates declared values to be specified against a parameter (to be specified in Test Requests) to enable testing of sample against the requirement and determine its conformity. Any other requirements/parameters may also be declared as per the standard, as applicable.
3.	**परीक्षण उपकरणों की सूची** **List of Test Equipment**	:	कृपया Annex-A देखें Please refer ANNEX -A
4.	**निरीक्षण और परीक्षण की स्कीम** **Scheme of Inspection and Testing**	:	कृपया Annex-B देखें Please refer ANNEX -B
5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day**		
	All tests are possible in a day Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.		
6.	**लाइसेंस का दायरा /Scope of the Licence:**		
	Licence is granted to use Standard Mark as per IS 11657 : 2025 with the following scope :		
	Name of the product	Phosphorus Oxychloride, Technical	

ANNEX A
LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Boiling Range (Clause 3.2, Table 1, Sl. No. i)	- Round Bottom Flask, Thermometer (98°C to 152°C), Leibig Condenser, Receiver Measuring Cylinder, Glass Beads - Boiling range apparatus
2.	Relative Density (Clause 3.2, Table 1, Sl. No. ii)	- Hydrometer, 1.600 to 1.700 - Hydrometer Jars - Cylinder, 250ml - Thermometer - Constant temperature Bath
3.	Assay (as $POCl_3$) (Clause 3.2, Table 1, Sl. No. iii)	**Acidimetric Method** - Standard Sodium Hydroxide, Thymolphthalein Indicator, Sodium Chloride - Weighing Balance, Stoppered weighing bottle, pH meter, Pipette, Burettes **Excess Chloride Method** - Standard Silver Nitrate Solution, Standard Ammonium Thiocyanate Solution, Ferric Alum Indicator, Dil. Nitric Acid, Nitrobenzene. - Weighing Balance, Conical Flask, Volumetric flask, Pipettes (from 01ml), Burettes
4.	Arsenic (Clause 3.2, Table 1, Sl. No. iv)	<u>Method A</u> - Conc. HCl, Hydrazine Sulphate, Sodium Bromide, Lead Acetate Solution, Lead Acetate Paper Strips, Absorbent Cotton Wool, Mercuric Bromide, Rectified Spirit, Sensitized Mercuric Bromide Paper strips, Filter paper, Dil Sulphuric Acid, Conc. HCl, Potassium Iodide Solution, Stannous Chloride, Zinc Granules, Arsenic trioxide, Sodium Hydroxide. - Weighing Balance, Small Distillation flask, Pipettes, Burettes, Condenser, Beakers, Volumetric Flask, Amber Coloured Glass bottle, Stoppered Glass bottles. - Apparatus as per Modified Gutzeit Method <u>Alternate Method (ICP OES)</u> - ICP OES, as per clause B-8 - Nitric Acid, Standard Stock Solution, Standard Solution, Certified Reference Material <u>Alternate Method (ICP MS)</u> - ICP MS, as per IS 3025 (Part 65) - Nitric Acid, Standard Stock Solution, Standard Solution, Certified Reference Material, Hydrochloric acid, Sulfuric acid, Hydrogen peroxide

5.	Iron (Clause 3.2, Table 1, Sl. No. v)	Method A - Spectrophotometer - Standard Laboratory Glass Apparatus - Distilled Water, Conc. HCl, Hydroxylammonium chloride, Ammonium Acetate , 2, 2' Bipyridyl Solution, Ferrous Ammonium Sulphate hexahydrate, Sulphuric Acid. - Weighing Balance, Platinum Dish, water bath, Whatman No. 541 filter paper, Beakers, Pipettes, Conical flask, volumetric flask, Refrigerator. Alternate Method (ICP OES) - ICP OES, as per clause B-8 - Nitric Acid, Standard Stock Solution, Standard Solution, Certified Reference Material Alternate Method (ICP MS) - ICP MS, as per IS 3025 (Part 65) - Nitric Acid, Standard Stock Solution, Standard Solution, Certified Reference Material, Hydrochloric acid, Sulfuric acid, Hydrogen peroxide
6.	Phosphorus Trichloride (Clause 3.2, Table 1, Sl. No. vi)	- Gas Chromatograph, Nitrogen Phosphorus Detector, Purified Helium Carrier Gas. External Standards of PCl_3, Teflon Bottles, Micropipette, Weighing Balance.

ANNEX B

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

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

1.2 The manufacturers shall define a Quality Assurance Plan (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the differenttests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or subcontracting/sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : entire quantity of Phosphorus Oxychloride, technical manufactured under similar conditions in a day.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

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.

2. ENSURING COMPLIANCE THROUGH TESTING- manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred :

i) Shared testing resources like common facility,

ii) Cluster based testing facility,

iii) Sub-contracting to outside laboratories which may either be:

a) BIS recognised/empanelled laboratories, or

b) Any accredited laboratory as per ISO/IEC 17025

2.1 **TEST RECORDS**- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark, as given in the Schedule of the licence, shall be marked on each packing, provided always that the product thus marked conforms to every requirements of the specification.

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

3.2 **Additional Marking requirements**: Additionally, the following shall also be marked on package:

a) "For BIS certification details please visit www.bis.gov.in"
b) The word ' Poisonous ' together with symbol as given in Fig. 15 of IS : 1260 (Part I) shall also be given on the label. The label shall have a note as follows : CAUTION : Phosphorus oxychloride is highly corrosive. When mixed with water, it decomposes with evolution of heat

4. REJECTION - 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 CONTROL

(Recommended Levels Of Control By BIS- For Guidance Only)

(1)				(2)		
Test Details				**Levels of Control**		
Cl.	**Requirement**	**Test Method**		**No. of Sample**	**Frequency**	**Remarks**
		Clause	**Reference**			
3.1	Description	3.1	IS 11657	One	Each Control Unit	
3.2, Table 1, Sl No i	Boiling Range	A-2	IS 11657	One	Each Control Unit	
3.2, Table 1, Sl No ii	Relative Density at 27°C	A-3	IS 11657	One	Each Control Unit	
3.2, Table 1, Sl No iii	Assay (as $POCl_3$)	A-4	IS 11657	One	Each Control Unit	
3.2, Table 1, Sl No iv	Arsenic	A-5	IS 11657	One	Once in a month	
3.2, Table 1, Sl No v	Iron	A-6	IS 11657	One	Once in a month	
3.2, Table 1, Sl No vi	Phosphorus Trichloride	A-7	IS 11657	One	Each Control Unit	