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उत्पाद मैनुअल
थैलिक एनहाइड्राइड, तकनीकी — विशिष्टि

IS 5158: 2025 के अनुसार

PRODUCT MANUAL

Phthalic Anhydride, Technical — Specification

ACCORDING to IS 5158: 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 5158 : 2025
	शीर्षक Title	:	Phthalic Anhydride, Technical — Specification
	संशोधनों की संख्या No. of amendments	:	NIL
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	NA
c)	नमूने का परिमाण Sample Quantity	:	25 Kg

d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	Name of the Product: Note: Apart from the above, any other requirements/parameters may also be declared as per the standard, as applicable.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	: Please refer to Annex-A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	: Please refer to Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day	
	All tests are possible in a day	
6.	लाइसेंस का दायरा /Scope of the Licence:	
	"Licence is granted to use Standard Mark as per IS 5158: 2025 with the following scope:	
	Name of the product	Phthalic Anhydride, Technical

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

ANNEX – A

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests used in with Clause Reference	Test Equipment/Chemicals
1.	Description, Cl 2.1.1	Heating device capable of heating up to 160 deg C,
2.	Crystallisation point (Cl. 3.2 & Table1)	Crystallizing point apparatus as per Annex-B-2 of IS 5158
3.	Colour of the Molten Material (Cl. 3.2 & Table1, Sl.No. ii & iii)	– Identical Flat-Based Colorimetric Tubes – One-Mark Graduated Flasks – Electrically-Heated Aluminum Block – Cobaltous Chloride hexahydrate – Hydrochloric Acid – Chloroplatinic Acid – Potassium chloroplatinate – Pipette
4.	Free Acidity as $[C_6H_4(COOH)_2]$ (Cl. 3.2 & Table1, Sl.No. iv)	– Phthalic Acid – Ethyl Methyl Ketone – Bromophenol Blue Indicator – Standard Triethylamine Solution (in Ethyl Methyl Ketone) – Weighing balance – Hot plate – Conical flask
5.	Purity by GC, (Phthalic Anhydride content), Maleic Anhydride and other Oxidizable Impurities (as $C_4H_2O_3$), Naphthaquinone, Naphthalene, Phthalimide (Cl. 3.2 & Table1) (Sl. No. v, vi, ix, x, xi)	– Gas Chromatograph – flame ionization detector – Syringe – Acetone – Maleic Anhydride – p-Benzoquinone – Citraconic Anhydride – o-Tolualdehyde – Benzoic Acid – o-Toluic Acid – Phthalide – 4-Methyl Phthalic Anhydride – Phthalimide – Naphthalene – Naphthaquinone – Phthalic Anhydride – Calibration standards
6.	Ash (Cl. 3.2 & Table1, Sl.No. vii)	– Platinum or Silica Basin – Furnace capable of maintaining 600+/- 25 °C
7.	Iron Content (Cl. 3.2 & Table1, Sl.No. viii)	METHOD A — 2,2'-Bipyridyl Method – One-Mark Graduated Flask 100ml and 1 000 ml capacity – Spectrophotometer or Electrophotometer – Stirrer of glass or platinum wire

		– Concentrated Hydrochloric Acid – Dilute Sulphuric Acid – Dilute Nitric Acid – Urea Solution – Hydroxyammonium Chloride Solution – Ammonium Acetate Solution – 2,2'-Bipyridyl Solution – Standard Iron Solution METHOD B — Thioglycolic Acid Method – One-Mark Graduated Flasks — 25ml, 1 000 ml capacity, – Nessler Cylinders — 100 ml capacity – Concentrated Hydrochloric Acid – Ammonium Hydroxide – Thioglycolic Acid Solution – Citric Acid Solution – Standard Iron Solution
8.	Sampling of Phthalic Anhydride, Technical (Cl.6)	– Sampling Instrument as per Fig 2 of IS 5158 – General laboratory vessels like conical flask, Burette, pipette, – Volumetric Flask etc – Hot plate, – Bunsen Burners etc.

ANNEX B

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: For the purpose of this product, whole production carried out under similar conditions 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/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 each container of phthalic anhydride, technical 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 Additional Marking requirements: The material shall also be marked with the following additional requirement on each consumer pack or on each container of phthalic anhydride, technical:

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
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of control		
Cl.	Requirements	Test Method			No. of samples	Frequency	Remarks
		Clause	Reference				
3.1	Description	3.1	IS 5158	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			---
3.2	Crystallizing point	3.2	Annex B of IS 5158	R	One	Each Control Unit	---
-do-	Colour of the Molten Material Pt-Co scale	-do-	Annex C of IS 5158	R	One	Each Control Unit	---
-do-	Colour of the Molten Material after heat treatment Pt-Co scale	-do-	Annex C of IS 5158	R	One	Each Control Unit	
-do-	Free Acidity as [C ₆ H ₄ (COOH) ₂]	-do-	Annex D of IS 5158	R	One	Each Control Unit	---
-do-	Purity by GC, (Phthalic Anhydride content), Maleic Anhydride, Naphthaquinone, Naphthalene, Phthalimide and other Oxidizable impurities (as C ₄ H ₂ O ₃) (Sl. No. v, vi, ix, x, xi)	-do-	Annex E of IS 5158	R	One	Each Control Unit	---
-do-	Ash Content	-do-	Annex F of IS 5158	R	One	Each Control Unit	---
-do-	Iron Content	-do-	Annex G of IS 5158	R	One	Each Control Unit	---