



उत्पाद मैनुअल
TRISODIUM PHOSPHATE
IS 573:2023 के अनुसार

PRODUCT MANUAL
FOR
TRISODIUM PHOSPHATE
ACCORDING TO IS 573:2023

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 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 573:2023
	शीर्षक Title	:	Trisodium Phosphate
	संशोधनों की संख्या No. of amendments	:	NIL
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific raw material requirement
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer <u>ANNEX – A</u>

c)	नमूने का आकार Sample Size	:	500 grams
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer <u>ANNEX – B</u>
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer <u>ANNEX – C</u>
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	(i) All tests as per cl. no. 5.2 except Nitrogen Compounds and Sulphates		
6.	लाइसेंस का दायरा /Scope of the Licence		
	Licence is granted to use Standard Mark as per IS 573:2023 with the following scope:		
	Name of the product	Trisodium Phosphate	
	Grades	Technical (Tech) and/or Analytical (AR)	
	Type	Dodecahydrate and/or Anhydrous	
	Special Requirements	To be used for softening water and/ or prevention of hard boiler scale	

BUREAU OF INDIAN STANDARDS
Manak Bhawan, 9, Bahadur Shah Zafar
Marg, New Delhi – 110002

**ANNEX A TO THE PRODUCT
MANUAL
FOR TRISODIUM PHOSPHATE AS
PER IS 573:2023**

Grouping Guidelines

1. For the purpose of GoL/ CSoL of Trisodium Phosphate as per IS 573, the following parameters shall be considered for grouping:
 - (i) Grade – Technical/Analytical
 - (ii) Type- Dodecahydrate/Anhydrous

Grade	Type	
Technical (Tech)	Dodecahydrate	Anhydrous
Analytical (AR)	Dodecahydrate	--

2. Samples of each grade and type shall be drawn and tested for all requirements to cover all the grades and types of Trisodium Phosphate in the scope of licence.
3. In case trisodium phosphate, technical, dodecahydrate grade intended to be used for softening water and for prevention of hard boiler scale is to be covered in the scope of licence, the special requirements for soluble silica (SiO₂) and chloride (Cl) shall be tested.
4. The firm shall declare the varieties they intend to cover in the licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
5. During the operation of the Licence, BO shall ensure that all the varieties covered in the licence are tested in rotation, to the extent possible.

**ANNEX B TO THE
PRODUCT MANUAL
List of Test Equipment**

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Matter insoluble in water (Cl. No. 5.2 & Table-1)	• Weighing Balance • Filter paper/Sintered Glass Crucible/Gooch Crucible • Hot Air Oven • Desiccator • Measuring cylinder
2	Phosphates (as P ₂ O ₅) (Cl. No. 5.2 & Table-1)	• Quinoline • Conc.Hydrochloric Acid • Zinc Chloride • Standard Sodium Hydroxide Solution • Standard Hydrochloric Acid- 0.5 N & 0.1 N • Sodium Molybdate • Citric Acid • Potassium Bromate • Filter Pad and Papers • Stopper Glass Bottles • Alcoholic Phenolphthalien Solution • Alcohol Thymol Blue Solution • Weighing Balance • Measuring Cylinder/Flask • Heating Apparatus • Hot Plate • Stirrer • Titration Apparatus
3	Carbonates (as Na ₂ CO ₃)	• Barium Chloride Solution - about 10%

	(Cl. No. 5.2 & Table-1)	• Phenolphthalein Indicator Solution • Standard Hydrochloric Acid -0.1 N • Methyl Orange Indicator Solution • Silver Nitrate Solution - about 5% • Benzyl Alcohol • Methyl Red Indicator Solution • Standard Sodium Hydroxide Solution- 0.1 N • Weighing Balance • Volumetric Flask • Conical Flask • Pipette • Measuring Cylinder • Beaker • Titration Setup
4	Carbonate alkalinity (as NaOH) (Cl. No. 5.2 & Table-1)	
5	Free sodium hydroxide (as NaOH) (Cl. No. 5.2 & Table-1)	
6	Total alkalinity (as NaOH) (Cl. No. 5.2 & Table-1)	
7	Soluble iron compounds (as Fe) (Cl. No. 5.2 & Table-1)	• Photoelectric Absorptiometer • One-Mark Graduated Flasks • Dilute Hydrochloric Acid • Sodium Citrate Solution(1M)/Ammonium Citrate Solution (2M) • Ammonium Hydroxide • Thioglycollate Reagent • Standard Iron Solution • Filter Papers • Photometric Cells • Glass Rod • Weighing Balance • Pipette
8	Nitrogen compounds (as N) (Cl. No. 5.2 & Table-1)	• Nessler Cylinder • Sodium Hydroxide Solution • Devarda's Alloy • Potassium Iodide • Ammonia Free Water • Mercuric Chloride Solution • Potassium hydroxide • Rubber Stopper Bottle • Dilute Hydrochloric Acid • Standard Ammonium Chloride Solution

		• Measuring Cylinder • Weighing Balance
9	Sulphates (as SO ₄) (Cl. No. 5.2 & Table-1)	• Dilute Hydrochloric Acid • Barium Chloride Solution • Hot Air Oven • Hot Plate • Measuring Cylinder • Weighing Balance • Pipette OR Ion chromatography setup as per A-13

10	Arsenic (as As ₂ O ₃) (Cl. No. 5.2 & Table-1)	• Apparatus for Determination of Arsenic (Modified Gutzeit Method) • Lead Acetate Solution • Lead Acetate Paper Strips • Absorbent Cotton wool Impregnated with Lead Acetate • Mercuric Bromide Solution • Sensitized Mercuric Bromide Paper Strips • Dilute Sulphuric Acid • Conc.Hydrochloric Acid • Potassium Iodide Solution (15% m/v) • Stannous Chloride Solution • Zinc Granules • Standard Arsenic Stock Solution • Silver Diethyldithiocarbamate solution • Rubber Stopper • Tweezer s Or • Apparatus for Determination of Arsenic (Silver Diethyldithiocarbamate Method) • Spectrophotomer or Photoelectric Absorptiometer • Photometric Cells • Standard Arsenic Stock Solution • Conc.Hydrochloric Acid • Potassium Iodide Solution (15% m/v) • Stannous Chloride Solution • Absorbent Cotton wool Impregnated with Lead Acetate • Silver Diethyldithiocarbamate solution
----	---	---

		• Zinc Granules OR ICP-OES and setup as per A-12
11	Heavy metals (as Pb) (Cl. No. 5.2 & Table-1)	• Nessler Cylinder • Acetic Acid • Dilute Ammonium Hydroxide • Hydrogen Peroxide • Potassium Cyanide Solution • Conc. Nitric Acid • Standard Lead Solution • Sodium Sulphide Solution • Burnt Sugar Solution • Weighing Balance OR ICP-OES and setup as per A-12
12	Soluble silica (as SiO ₂) (Cl. No. 5.2 & Table-1)	• 1, Amino-2-Naphthol 4, Sulphonic Acid • Sodium Sulphite • Distilled Water • Sodium Hydrogen Sulphite • Hydrochloric Acid • Ammonium Molybdate Solution • Oxalic Acid • Standard Silica Solution • Muffle Furnace • Polyethylene Container • Spectrophotometer
13	Chloride (as Cl) (Cl. No. 5.2 & Table-1)	• Nessler cylinder • Nitic Acid • Silver Nitrate • Standard Chloride Solution • Weighing Balance OR Ion chromatography setup as per A-13

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

**ANNEX C TO THE PRODUCT
MANUAL
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. LABELLING AND MARKING – The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each package containing the product 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 requirements of the standard. In addition, the following shall be marked on each package:

a) BIS licence number and “For BIS certification details please visit www.bis.gov.in”

4. CONTROL UNIT – For the purpose of the scheme, Trisodium Phosphate of one type and grade manufactured in a day 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.

6. 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

(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	Refere n ce				
5.1	Description	5.1	IS 573	R	Adequate Visual Inspection		-----
5.2 (Table 1)	Matter insoluble in water	A-2	IS 573	R	One	Each Control Unit	-----
5.2 (Table 1)	Phosphates (as P2O5)	A-3 or A-4	IS 573	R	One	Each Control Unit	-----
5.2 (Table 1)	Carbonates (as Na2CO3)	A -4	IS 573	R	One	Each Control Unit	-----
5.2 (Table 1)	Carbonate alkalinity (as NaOH)	A-4	IS 573	R	One	Each Control Unit	-----
5.2 (Table 1)	Free sodium hydroxide (as NaOH)	A -4	IS 573	R	One	Each Control Unit	-----
5.2 (Table 1)	Total alkalinity (as NaOH)	A-4	IS 573	R	One	Each Control Unit	-----
5.2 (Table 1)	Soluble iron compounds (as Fe)	A-5	IS 573	R	One	Each Control Unit	-----
5.2 (Table 1)	Nitrogen compounds (as N)	A-6	IS 573	R	One	Each Control Unit	-----

5.2 (Table 1)	Sulphates (as SO ₄)	A-7 or A-13	IS 573	R	One	Each Control Unit	-----
5.2 (Table 1)	Arsenic (as As ₂ O ₃)	A-8 or A-12	IS 573 IS 2088	R	One	Each Control Unit	-----
5.2 (Table 1)	Heavy metals (as Pb)	A -9 or A-12	IS 573	R	One	Each Control Unit	-----
5.2 (Table 1)	Soluble silica (as SiO ₂)	A-10	IS 573	R	One	Each Control Unit	Only for Trisodium Phosphate, Technical, Dodecahydrate grade and only for material intended to be used for softening water and for prevention of hard boiler scale
5.2 (Table 1)	Chloride (as Cl)	A-11 or A-13	IS 573	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.