

PM/6100/1
May 2022

उत्पाद मैनुअल
Sodium Tripolyphosphate, Anhydrous, Technical — Specification
IS 6100:2021 के अनुसार

PRODUCT MANUAL
FOR Sodium Tripolyphosphate, Anhydrous, Technical — Specification
ACCORDING TO IS 6100:2021

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 6100:2021
	शीर्षक Title	:	Sodium Tripolyphosphate, Anhydrous, Technical — Specification
	संशोधनों की संख्या No. of amendments	:	00
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Not applicable
c)	नमूने का आकार Sample Size	:	500 g approx.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex-A

4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	All tests		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 6100:2021 with the following scope:		
	Name of the product	Sodium Tripolyphosphate, Anhydrous, Technical	

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

ANNEX-A

LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1	Sieve Analysis, Cl. 3.2	500-micron IS Sieve, 150 micron IS Sieve , 75-micron IS Sieve, Camel Hair Brush, Analytical balance, Rubber cushion, glazed paper, containers
2	Moisture, Cl. 3.3	Wide-mouth glass weighing bottle, Analytical balance, Drying Oven, Dessicator
3	Matter Insoluble in Water, Cl 3.3	Analytical balance, Hot Plate, sintered glass crucible G No. 3 or asbestos padded Gooch crucible, Filter paper, Drying Oven, Dessicator
4	Phosphorus. Cl 3.3	<u>Chemical method</u> Beaker — 250 ml, pH meter, Analytical balance, Hot Plate, Titration apparatus and other laboratory glassware Reagents - Dilute hydrochloric acid, Dilute hydrochloric acid, bromocresol green (0.1 percent in water or 20 percent alcohol), phenolphthalein (0.5 percent in 60 percent alcohol), and absolute alcohol, Sodium hydroxide <u>Spectrophotometric method</u> Spectrophotometer, Titration apparatus and other laboratory glassware Reagents - ammonium metavanadate, nitric acid, NH₃ solution, ammonium Molybdate, potassium dihydrogen phosphate,
5	pH, Cl 3.3	pH Meter, Analytical balance, Hot Plate, Titration apparatus and other laboratory glassware
6	Iron, Cl 3.3	<u>Chemical method</u> Photoelectric absorptiometer, Analytical balance, Hot Plate, Titration apparatus and other laboratory glassware Reagents - Dilute hydrochloric acid, Sodium citrate solution 1 M/ ammonium citrate solution (2 M), Ammonium hydroxide, thioglycolic acid, ferrous ammonium sulphate, dilute sulphuric acid

		<u>Spectrophotometric method</u> Spectrophotometer, Analytical balance, Hot Plate, Titration apparatus and other laboratory glassware Reagents - ferrous ammonium sulphate, concentrated sulphuric acid, Hydroxylamine hydrochloride solution, o-phenanthroline, glacial acetic acid, sodium acetate, Dilute sulphuric acid, Dilute ammonium hydroxide
7	Copper, Cl. 3.3	<u>Chemical method</u> Separating funnels — 100 ml capacity, Photoelectric absorptionzeter — With 1 cm cells, Analytical balance, Hot Plate, Titration apparatus and other laboratory glassware Reagents - Ammonium hydroxide, Dilute hydrochloric acid, Zinc Dibenzylidithiocarbinate Solution, copper sulphate pentahydrate, 18 N sulphuric acid <u>Spectrophotometric method</u> Spectrophotometer, photoelectric absorptiometer with maximum transmission at a wavelength of 545 nm, Optical cells, 4 cm optical path, Analytical balance, Hot Plate, Titration apparatus and other laboratory glassware Reagents: Sodium sulphate, hydrochloric acid solution, amyl alcohol, (+) tartaric acid, sodium hydroxide, L-ascorbic acid (100 g/l) , 2-2'biquinolyl (0.5 g/l), bromine water-saturated solution, copper standard solution (0.1 g/l), indicator paper (narrow range) pH 5.5 to pH 7.0, Methyl orange indicator (0.5 g/l) aqueous solution <u>Neocuproine method (Cl. 5 of IS 3025 (Part 42):1992)</u> Spectrophotometer – for use at 457 nm with 1 cm cell, Analytical balance, Hot Plate, Titration apparatus and other laboratory glassware Reagents: Ammonium Hydroxide, Chloroform, Hydrochloric Acid, Hydroxylamine Hydrochloride Solution, Isopropyl Alcohol, Neocuproine Solution, Nitric Acid, Sulphuric Acid, Sodium Citrate Solution, Copper (II) Solutions
8	Lead, Cl. 3.3	Spectrophotometer, for use at 510 nm with a path length of 1 cm or longer, pH meter, Standard Volumetric Glasswares, TEF Beaker, 100 ml for Acid Digestion, Separatory Funnels, 250 ml and 500 ml. Reagents: Stock Lead Solution, Standard Lead

		Solution, Nitric acid — Concentrated and Dilute, Nitric acid — Concentrated and Dilute, Citrate-cyanide reducing solution, Stock Dithizone Solution
9	Tripolyphosphate Content, Cl. 3.3	Analytical balance, Hot Plate, Titration apparatus and other laboratory glassware, Thermometer, Buchner funnel fitted with a glass disc of medium porosity, Dessicator, Air Oven Isopropanol, p-nitrophenol, Dilute Hydrochloric Acid, Dilute Hydrochloric Acid, anhydrous sodium acetate, trisdiaminoethanecobaltic chloride, toluene, Isopropyl Alcohol, Sodium Tripolyphosphate, Hexahydrate, Diaminoethane hydrate (ethylene diamine), Concentrated hydrochloric acid, Cobalt chloride, Methylated spirit, commercial sodium tripolyphosphate
10	Chlorides, Cl. 3.3	<u>Method A</u> Analytical balance, Hot Plate, Titration apparatus and other laboratory glassware, Thermometer, Dessicator, Air Oven, Sintered glass crucible G No. 4, thick brown paper, rubber-tipped rod Reagents: Concentrated nitric acid, Silver nitrate solution, Dilute nitric acid <u>Method B</u> Conical flask, burette, pipette, measuring cylinder, dessicator and graduated cylinder Reagents — Standard silver nitrate, titrant, potassium chromate indicator
11	Fluorides, Cl. 3.3	Distillation apparatus (as per B-11.2.1), distillation apparatus, Thermometer — 0-150 °C, Burette with Top — 10 ml capacity, graduation interval 0.05 ml Reagents: Perchloric Acid, sodium alizarinesulphonate, sodium hydroxide pellets, sodium hydroxide pellets, thorium nitrate, sodium fluoride (AR)
12	Bulk density, Cl. 3.3	Bulk Density Apparatus Balance — Pans of the balance shall be at least 10 cm in diameter and the balance shall be sensitive to less than 0.1 g Rubber Base Pad — B shall have a shore hardness of 35 to 50.
13	Temperature Rise, Cl. 3.4	Thermos Flask — Wide-mouth vacuum flask, capacity about 1 200 ml; inner dia about 8 cm; height about 22 cm Beaker — Tall form 200 ml; height 10 cm; dia 6.5 cm.

		Stirrer — A stirrer having two 3.5 cm diameter rings attached 2.5 cm apart to a handle and made from 0.3 cm stainless steel rod Thermometers — Two thermometers graduated from 0 to 50 °C, least count 0.1 °C and total length 550 mm (see schedule mark 22 of IS 4825) Stop-watch Measuring Cylinder — 25 ml capacity Glycerine — Purity 96.5 ± 0.5 percent; specific gravity at 20°/20 °C, 1.2546 ± 0.0015
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The list above is indicative only and may not be considered as exhaustive

ANNEX B
SCHEME OF INSPECTION AND TESTING

1. **LABORATORY-** A laboratory shall be maintained, which shall be suitably equipped (as given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the method given in the specification.

1.1 The manufacturer shall prepare and implement a calibration plan for the test equipment.

2. **TEST RECORD-** The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. **PACKING AND MARKING** - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each container provided always that the material so marked conforms to each requirement of the specification.

3.1 The material shall be packed in clean, dry and airtight steel drums or paper bags or as agreed to between the purchaser and the supplier. The containers shall not be opened until required for use and shall not remain open for a period longer than required for taking out the material

3.2 Each container shall bear legibly and indelibly the following information:

- a) Name and grade of the material,
- b) Indication of the source of manufacture,
- c) Mass of the material in the container,
- d) Date of packing
- e) Batch /Control Unit Number
- f) BIS licence number and "For BIS certification details please visit www.bis.gov.in"

5. **CONTROL UNIT-** For the purpose of this scheme, entire quantity of material manufactured in a single production line under similar conditions in one day shall be taken as one control unit.

6. **LEVELS OF CONTROL** :- The tests as indicate in Table 1 and at the levels of controls in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and records maintained in accordance with paragraph 2 above.

6.1 All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark.

7. **REJECTION** - 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.

TABLE1
LEVELS OF CONTROL

(1)				(2)	(3)		
Test Details				Test equipment requirement	Levels of Control		
Cl.	Requirement	Test Methods Clause Reference		R: required (or)S: Sub-contracting permitted	No. of Sample	Frequency	Remarks
3.1	Description	3.1	IS 6100	R	Adequate inspection		
3.2	Sieve Analysis	Annex A	-do-	R	03	Each control unit	
3.3, Table 1	Requirements for Sodium Tripolyphosphate, Anhydrous, Technical						
i.	Moisture	B-2	IS 6100	R	03	Each control unit	
ii.	Matter insoluble in water	B-3	-do-	R	-do-	-do-	
iii.	Phosphorus	B-4	-do-	R	-do-	-do-	
iv.	pH value	B-5	-do-	R	-do-	-do-	
v.	Iron	B-6	-do-	R	-do-	-do-	

vi.	Copper	B-7	-do-	R	-do-	-do-	
vii.	Lead	B-8	-do-	R	-do-	-do-	
viii.	Tripolyphosphate content	B-9	-do-	R	-do-	-do-	
ix.	Chlorides	B-10	-do-	R	-do-	-do-	
x.	Fluorides	B-11	-do-	R	-do-	-do-	
xi.	Bulk Density	B-12	-do-	R	-do-	-do-	
3.4	Temperature Rise	Annex C	-do-	R	-do-	-do-	

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.