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उत्पाद मैनुअल

**NICKEL SALTS FOR ELECTROPLATING —
SPECIFICATION**

1809:2024 के अनुसार

**PRODUCT MANUAL
FOR NICKEL SALTS FOR ELECTROPLATING —
SPECIFICATION
ACCORDING TO IS 1809: 2024**

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 1809 : 2024
	शीर्षक Title	:	Nickel Salts for Electroplating — Specification
	संशोधनों की संख्या No. of amendments	:	NIL
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	NIL 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	:	Each variety to be drawn and tested to be included in the scope of licence.

c)	नमूने का परिमाण Sample Quantity	:	500g 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	:	i) Type ii) Grade 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 to be carried out 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 1809: 2024 with the following scope:		
	Name of the product	Nickel Salts for Electroplating — Specification	
	Type	Nickel sulphate/ Nickel chloride/ Nickel ammonium sulphate/ Nickel carbonate/ Nickel sulphamate	
	Grade	Grade I / Grade II [wherever applicable]	

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ANNEX-A

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests used in with Clause Reference	Test Equipment/Chemical
1	pH of aqueous solution (clause 3.2)	- pH Meter — with glass electrode - Weighing Balance - Distilled water - Magnetic stirrer
2	Insoluble matter (clause 3.2)	- Concentrated Hydrochloric Acid - Dilute Sulphuric Acid - Hot air oven capable of maintaining $(105 \pm 2^{\circ}\text{C})$ - Hot plate
3	Nickel (as Ni) (clause 3.2)	- Concentrated Sulphuric Acid - Potassium Hydroxide Solution - Tartaric Acid - Ammonium Hydroxide — relative density 0.90 - Dimethylglyoxime Solution — one percent (m/v) solution in rectified spirit - Magnetic stirrer - Hot plate - Desiccator
4	Cobalt (as Co) (clause 3.2)	- Potassium hydroxide solution — 10 percent (m/v) - Glacial acetic acid - Potassium nitrite solution — 50 percent (m/v) - Ammonium nitrate solution — 5 percent (m/v) - Standard potassium permanganate solution — approximately 0.1 N - Dilute sulphuric acid — 10 percent (v/v) - Potassium iodide - Standard sodium thiosulphate solution — approximately 0.1 N - Starch indicator solution - Pipette - 400ml beaker - Hot plate - Steam bath - Filter paper - Sintered glass crucible (G No.4) - Desiccator - Titration Assembly Or

		- Atomic absorption spectrophotometer (AAS) Or - ICP-MS
5	Copper (as Cu) (clause 3.2)	- Nessler cylinders — 50 ml capacity - Concentrated hydrochloric acid - Mercuric chloride solution — 1 percent (m/v) - Hydrogen sulphide gas - Hydrogen sulphide water — freshly prepared saturated aqueous solution - Concentrated nitric acid - Potassium ferrocyanide solution — 10 percent (m/v) in water - Standard copper solution - Hot plate - Filter paper - Porcelain crucible Or - Atomic absorption spectrophotometer (AAS) Or - ICP-MS
6	Heavy metals (as Pb) (clause 3.2)	- Sodium acetate — solid - Glacial acetic acid - Potassium chromate solution - Ammonium hydroxide — 1 : 4 (v/v) - Dilute sulphuric acid — 10 percent (v/v) - Hydrogen sulphide gas - Hydrogen sulphide water - Concentrated nitric acid - Concentrated sulphuric acid - Ammonium acetate solution - Ammonium molybdate solution - Ammonium nitrate solution - Filter Pulp Pad - Denatured Spirit - Hot Plate - Porcelain crucible - Furnace Or Atomic absorption spectrophotometer (AAS) Or ICP-MS

7	Iron (as Fe) (clause 3.2)	- Nessler cylinders — two of 50 ml capacity - Concentrated hydrochloric acid - Concentrated nitric acid - Ammonium hydroxide — 1 : 4 (v/v) - Dilute ammonium hydroxide — 1 : 10 (v/v) - Dilute hydrochloric acid — approximately 4 N - Ammonium persulphate - Ammonium thiocyanate solution — approximately 5 percent (m/v) - Standard iron solution Or - Atomic absorption spectrophotometer (AAS) Or - ICP-MS
8	Zinc (as Zn) (clause 3.2)	- Nessler cylinders — two of 50 ml capacity - Ammonium thiocyanate solution — 10 percent (m/v), filtered - Ammonium thiocyanate wash solution - Dilute hydrochloric acid — 50 percent (v/v) - Ammonium chloride solution — 20 percent (m/v) - Sodium carbonate solution — approximately 1 N - Hydrogen peroxide — strength, 20 percent (m/m) - Ammonium chloride wash solution - Potassium chloride wash solution — 0.25 percent (m/v) - Acetone - Diphenylcarbazone solution - Amyl alcohol - Cobalt sulphuric solution — 1 percent (m/v) - Standard zinc solution Or Atomic absorption spectrophotometer (AAS) Or ICP-MS
9	Nitrates as (NO ₃) (clause 3.2)	- Sodium Carbonate - Concentrated Sulphuric Acid - Dilute Sulphuric Acid - Indigo Carmine Solution
10	Sulphate (as SO ₄) (clause 3.2)	- Barium Chloride Solution Dilute - Hydrochloric Acid
11	Chemical lab instruments (clause 3.2)	- Volumetric Flask - Measuring Cylinder - Burette

		- Pipette (Volumetric / Graduated) - Beaker - Conical Flask - Desiccator - Hot plate - Weighing balance - Magnetic Stirrer - Filter Paper
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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: Nickle salts of particular type and grade manufactured using same raw material, under similar conditions of manufacturing 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**.

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, 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 container:

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	Recommended Levels of Control		
Clause	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
3.1	Description	3.1	IS 1809	R	One	Each control unit	
3.2	pH of aqueous solution	3.2	IS 1809	R	One	Each control unit	
-do-	Insoluble matter	3.2	IS 1809	R	One	Each control unit	
-do-	Nickel (as Ni)	3.2	IS 1809	R	One	Each control unit	
-do-	Cobalt (as Co)	3.2	IS 1809	R	One	Each control unit	
-do-	Copper (as Cu)	3.2	IS 1809	R	One	Each control unit	
-do-	Heavy metals (as Pb)	3.2	IS 1809	R	One	Each control unit	
-do-	Iron (as Fe)	3.2	IS 1809	R	One	Each control unit	
-do-	Zinc (as Zn)	3.2	IS 1809	R	One	Each control unit	
-do-	Nitrates as (NO3)	3.2	IS 1809	R	One	Each control unit	
-do-	Sulphate (as SO4)	3.2	IS 1809	R	One	Each control unit	