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उत्पाद मैनुअल
रिफाइंड ज़िंक -विशिष्ट

IS 209:2024 के अनुसार

PRODUCT MANUAL
For Refined Zinc ACCORDING TO IS 209:2024

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 सांख्या** **IS No.**	:	IS 209:2024
	शीर्षक **Title**	:	Refined Zinc- Specification
	सांशोधनों की सांख्या **No.of amendments**	:	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**	:	Sample of each grade of Zinc shall be tested for the requirements of Chemical Composition only
c)	**नमूने का परिमाण** **Sample Size**	:	For Physical tests: Mass, Freedom from Defects shall be carried out in the factory on the ingot For chemical composition: 500gms in the form of Drillings or Molded buttons from the ingot (As per instrumental method) *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 (incase 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)
3.	परीक्षण उपकरणों की सूची **List of Test Equipment**	:	Please refer Annex – A
4.	ननरीक्षण 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 (if chemical testing done by instrumental method) *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.	**Scope of the Licence:**		
	"Licence is granted to use Standard Mark as per **IS 209:2024** with the following scope:		
	Name of the product:	Refined Zinc	
	Grade:	Zn99.995% / Zn99.99% / Zn99.95% / Zn99.5% / Zn98.65%	

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
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ANNEX – A
LIST OF TEST EQUIPMENT

(Indicative List, For Guidance only)

Tests used in with Clause Reference	Test Equipment
Cl 6 Chemical Composition (By Spectrophotometry) IS 2600 Part-1	Copper Content: Ammonium Hydroxide, Citric Acid, Sodium Diethyl Dithio Carbamate, Chloroform, EDTA Solution, Standard Copper Solution, Nitric Acid
	Iron Content: Hydrochloric Acid, Methyl Isobutyl Ketone, Ascorbic Acid, O-Phenanthroline, Standard Iron Solution
	Nickel Content: Citric Acid, Ammonium Persulphate, Ammonium Hydroxide, Hydroxyle Amine Hydrochloride, Di-Methyl glyoxime, Chloroform, Hydrochloric Acid, Bromine Water, Standard Nickel Solution
	Tin Content: Thiourea Solution, Ascorbic Acid, Quercetin, Ethanol, Hydrochloric Acid, Methyl Isobutyl Ketone, Sulphuric Acid, Standard Tin Solution
	Thallium Content: Hydrochloric Acid, Hydro Bromic Acid, Bromine Water, Isopropyl Ether, Rhodamine B, Standard Thallium Solution
Cl 6 Chemical Composition (By Atomic Absorption Spectrophotometry) IS 2600 Part-2	Determination of Copper, Iron, Lead, Cadmium content: Hydrochloric Acid, Nitric Acid, 99.99% Pure Copper, 99.99% Pure Iron, Bromine water, 99.99% Pure Lead, 99.99% Pure Cadmium,
Cl 6 Chemical Composition (By Atomic Absorption Spectrophotometry) IS 2600 Part-3	Determination of Indium Content: Suitable AAS as per Cl 5.3 of IS 2600 Pt-3, Hydrochloric Acid, Nitric Acid, Sulphuric Acid, Isopropyl Ether, Hydrobromic Acid, Ascorbic Acid, 99.99% Pure Indium,
Cl 6 Chemical Composition (By any established Instrumental method)	Equipment for analysing chemical composition by any established method. Optical Emission Spectrometry or any other
	Standard Reference Material
Cl 6 Sample preparation tools for Chemical Composition (As required by Instrumental method)	Muffle Furnace, Polishing Machine, Weighing Scale, Hot Plate, Cast Iron Moulds, sampling mould for spectrometer, Compressing Machine for sample pelletization, Weighing Scale
Cl 7 Freedom from Defects	Arrangement for fracture of Ingots, Chisel & Hammer or any other tools
Cl 8 Mass	Weighing Scale

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 Scheme, all Zinc ingots, slabs, tiles or plates produced continuously from the same cast at one time shall be taken as one control unit.**

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommendedlevels 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 requirementsof 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 withtest 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 onBIS 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 ingot, slab, tile or plate or on the label attached to each of these products and/or on the test certificate accompanying each consignment of ingot, slab, tile or plate provided always that thematerial so marked conforms to each requirement of the specification.

4. TEST CERTIFICATE – For each consignment of BIS Certified material conforming to the specification there shall be a test certificate which shall contain the Standard Mark, the lot/cast number and the corresponding test results (as given in Annexure I enclosed).

5. 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
LEVELS OF CONTROL
(Only for Guidance purpose)

(1)				(2)	(3)		
Test Details				**Test equipment requirement** R: required (or)S: Sub-contracting permitted	**Levels of Control**		
Cl.	Requirement	Test Methods Clause Reference			No. of Sample	Frequency	Remarks
7	Chemical Composition	---	IS 406/IS 2600 (Part 1)/IS 2600 (Part 2)/IS 2600 (Part 6)/IS 2600 (Part 7) /any established instrumental or chemical method	R	One	Each Heat/Each Cast/Each Melt	-----
9	Freedom from Defects	7	IS 209	R	Firm shall exercise adequate in process controls to ensure that each ingot, slab, plate or tile, is free from harmful defects.		----
8	Shape and Mass of Ingots	8.1, 8.2	-do-	R	Adequate inspection to ensure that shape and mass of each ingot/slab/tile/plate conforms to the requirements as agreed to between the manufacturer and purchaser		----

ANNEXURE I
TEST CERTIFICATE FORMAT
XYZ COMPANY
TEST CERTIFICATE FOR REFINED ZINC

TEST CERTIFICATE NO._____DATED_____
TO M/s_____

It is certified that the material described below fully conforms to IS 209:2024. Chemical composition of the product, as tested in accordance with the Scheme of Inspection and Testing contained in the BIS Certification Marks Licence No. CM/L_are as indicated below against each order no. etc.

(PLEASE REFER TO IS 209: 2024 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order no and date	Purity Grade	Avg. Mass per Ingot /Slab /Tile/ Plate	Cast No./Lot No.	Quantity (in tonnes)	Chemical Analysis (in %)								Freedom from defects
					Zn	Pb	Fe	Cd	Al	Cu	Sn	Total of all impurities	

The material supplied conforms to specified tolerances
REMARKS
SHIPPING ADVICE NO.

WAGON NOS

FOR XYZ COMPANY

"For details of BIS certification please visit www.bis.gov.in"