HIGH PURITY TIN INGOTS - Gr:Sn 99.85

1. GENERAL:

This specification governs the quality requirements of High Purity Tin Ingots of grade Sn. 99.85

2. APPLICATION:

Used for alloying additions in copper based alloys in foundries, manufacturing of solders and tin based babbits and soldering of retaining bands of armatures and rotors.

3. CONDITION OF DELIVERY:

As cast.

4. COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply,in general, with the requirements of the following national standard and also meet the requirements of this specification.

IS:26-1992, Gr : Sn 99.85 : Tin Ingot.

5. SIZE AND SHAPE:

The material shall be supplied in the form of ingots weighing not more than 40 kg each.

6. MANUFACTURE:

Tin shall be produced from the ore by any approved process of smelting and refining.

7. FREEDOM FROM DEFECTS:

The ingots shall be free from dross, slag and other foreign inclusions and defects and shall have a clean surface.

8. TEST SAMPLES:

Unless otherwise agreed, one ingot shall be selected from each consignment of 1000 kg or part thereof representing one heat of the metal produced under uniform conditions of manufacture and offered for tests at one time.

The method of preparing samples for chemical analysis shall be in accordance with IS:1817.

9. CHEMICAL COMPOSITION:

The chemical composition of the material, when analysed in accordance with IS:1940-Method Of Chemical Analysis Of Tin Ingots, shall have the following composition:

	Element	Percent	
		Min	Max.
	Tin	99.85	-
★	Lead	-	0.04
★	Antimony	-	0.04
★	Bismuth	-	0.04
★	Copper	-	0.04
★	Arsenic	-	0.04
★	Iron	-	0.01
★	Total Impurities (including lead, antimony, bismuth, copper, arsenic and iron)	-	0.15

★ These elements need not be determined. However, the supplier shall ensure that the composition of the material lies within the limits specified above.

10. INSPECTION AT SUPPLIER'S WORKS :

Whenever specified, tests and inspection are to be conducted in the presence of BHEL's representative. The supplier shall offer BHEL's representative all reasonable facilities, without charge to satisfy the latter that the material is being furnished in accordance with this specification. The supplier shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works, the supplier shall make necessary arrangements for carrying out the prescribed tests elsewhere. The supplier shall notify BHEL in advance about the readiness of the material for inspection and testing.

BHEL reserves the right to test the material at BHEL's works and the final acceptance of the material shall be based on these test results.

11. TEST CERTIFICATE :

Unless and otherwise stated, three copies of test certificates shall be supplied along with each consignment giving the following information.

In addition, the supplier shall ensure to enclose one copy of test certificate along with their despatch documents to facilitate quick clearance of the material.

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BHEL order No.

Manufacturer's/supplier's name.

Melt No.

Consignment/Identification No.

Test results of Clause 9

12. PACKING AND MARKING:

The material shall be packed suitably to prevent damage during transit. Each consignment shall be legibly marked or labelled with the following information.

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BHEL order No.

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Melt No.

Consignment/Identification No.

Quantity Supplied.

13. REJECTION AND REPLACEMENT:

If the material does not comply with the requirements of this specification during receipt inspection or if it proves defective during the course of melting and casting, such material shall be rejected notwithstanding any previous certification of satisfactory testing and/or inspection. The supplier shall undertake to replace the rejected material free of cost without any delay and arrange to take back the rejected material at his own cost

14. REFERRED STANDARDS:

The following is the list of the latest standards, as published by the respective issuing bodies, referred to in this specification.

1. IS : 1817
2. IS : 1940