HIGH PURITY TIN INGOTS - Gr:Sn 99.85

1.0 GENERAL:

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

2.0 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.

3.0 CONDITION OF DELIVERY:

As cast.

4.0 COMPLIANCE WITH NATIONAL STANDARD:

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.

5.0 SIZE AND SHAPE:

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

6.0 MANUFACTURE

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

7.0 FREEDOM FROM DEFECTS:

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

8.0 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.

9.0 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, 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.

10.0 INSPECTION, Deviation and Replacement

10.1 BHEL reserves the right to inspect material at vendor/manufacturers premises before dispatch. The supplier shall intimate in advance about readiness of material enclosing a copy of test certificate of the material offered for inspection. However inspection at BHEL shall be final. The supplier shall offer BHEL representative all reasonable test facilities without charge to satisfy the latter that the material being furnished is 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.

10.2 If the material received is not found in accordance with these requirements, it shall be rejected and the supplier will have to replace it free of cost at the earliest.

10.3 For any deviation demanded by the supplier from the specification prior approval of BHEL must be obtained in writing.

11.0 TEST CERTIFICATES:

Unless otherwise specified, one original and three copies of original manufacturer's test certificates shall be supplied with each consignment bearing the following information. In order to facilitate quick clearance of material, the supplier shall ensure to send a copy of test certificate along with despatch document.

a. BHEL PO No. with date.
b. Specification No.
c. Supplier reference
d. Identification No. / Batch No.
e. Test results as per Clause 9.0
f. Any other specific information, which the supplier would like to convey.

Suppliers other than the original manufacturer shall ensure providing original manufacturer's test certificates with linkage to supplier's invoice stating the batch No., lot No., etc of the supply.

12.0 Packing and Marking

The material should be packed in suitable packing to avoid scale formation, pilferage and damage to the ingots during transportation, storage and to facilitate handling. Packing should be that of the original manufacturer. Each container shall have the following marking.

(a) Supplier's name and trade mark, if any.
(b) Name of the product, grade
(c) Melt. No. / Batch No.
(d) Net weight & Gross Weight.

14.0 LIST OF REFERRED STANDARDS

1) IS:26-1992 2) IS : 1817-1961 3) IS: 1940-1969