

TIN



Indian Minerals Yearbook 2019

(Part- II : METALS AND ALLOYS)

58th Edition

TIN

(ADVANCE RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

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17 Tin

Tin is one of the earliest metals known and used mainly in bronze implements. It is a scarce element having an incidence of about 2 ppm in the earth's crust. Its unique combination of properties like non-toxic nature, high malleability, chemical inertness and ease with which it can form an amalgam and alloy with other metals has given it a special status among non-ferrous metals. Pure tin is a silvery-white metal which is soft and malleable. It does not occur naturally as metal. By far, the most important tin mineral is cassiterite (SnO_2), which theoretically, in its purest form contains 78.6% tin. But usually it includes impurities of Nb, Ta, Zr, Sc, W and Fe. The less common tin ore is stannite ($\text{Cu}_2\text{SnFeS}_4$). Tin is now used mostly for tin plating, soldering special alloys and in making bronze.

RESERVES/RESOURCES

In India, tin ore is found associated with granite, pegmatites and quartz veins and also in placer deposits. Resources are spread over in Bastar and Dantewada districts of Chhattisgarh, Tosham deposit in Bhiwani district of Haryana and Malkangiri district of Odisha.

The total reserves/resources of tin ore in the country as per NMI data, based on UNFC system, as on 1.4.2015 is placed at 83.73 million tonnes containing about 1,02,413 tonnes metal. About 4,419 tonnes ore containing 154 tonnes metal are placed under 'Reserves' category and the bulk, i.e., about 83.72 million tonnes containing about 1,02,259 tonnes metal are placed under 'Remaining Resources' category. As per DMG Chhattisgarh, the total recoverable reserves of cassiterite concentrate is 19,544.58 tonnes in Tongpal area, Katekalyan area and Padapur-Bacheli area. The entire resources of tin are located in Chhattisgarh and Haryana. About 64% of total ore/metal resources are located in

Haryana and 36% in Chhattisgarh, while nominal resources are located in Odisha (Table-1).

EXPLORATION & DEVELOPMENT

The exploration and development details, if any, are covered in the Review on 'Exploration and Development' in 'General Reviews' i.e., Vol.-I of the title. As on 31.03.2018 (P), a total of 14 leases of tin have been granted to the various parties.

PRODUCTION, STOCKS & PRICES

Concentrates

The production of tin concentrates in 2018-19 was at 21,211 kg as against 16,758 kg in the preceding year. One Public Sector and three Private Sector mines reported production in 2018-19, while one Private Sector mine has reported labour only. All these mines are located in Chhattisgarh.

The mine-head closing stock of tin concentrates was 9,315 kg in 2018-19 as against 5,135 kg in 2017-18.

The Chhattisgarh Mineral Development Corporation Ltd (CMDC) purchases tin ores/minerals from local tribals, who collect them from the lease area. Hence, no labour was reported by the mine owned by the CMDC Ltd, whereas Precious Minerals and Smelting Ltd employed 9 workers in the current year as against 16 in the previous year on average daily basis (Tables-2 to 5).

Tin Metal

The plant owned by Precious Minerals and Smelting Ltd reported production of 7,436 kg of tin metal in 2018-19 as against production of 13,741 kg in the preceding year. The plant is located at Jagdalpur in Dantewada district of Chhattisgarh (Table-6).

**Table – 1 : Reserves/Resources of Tin as on 1.4.2015
(By Grades/States)**

Grade/State	Reserves										Remaining Resources				Total Resources (A+B)		
	Proved		Probable		Feasibility		Pre-feasibility		Measured		Indicated		Inferred			Reconnaissance	
	STD111	STD121	STD121	STD122	STD211	STD211	STD221	STD222	STD331	STD332	STD333	STD334	(A)	(B)		(A+B)	
All India : Total																	
Ore	2067	897	1455	4419	22594200	2653	31330072	168457	561080	29064288	-	83720749	83725168				
Metal	44.56	94.02	15.62	154.2	33139.45	842.8	54049.65	813.29	231.63	13182.34	-	102259.16	102413.36				
By States																	
Chhattisgarh																	
Ore	2067	897	1455	4419	1508	2017	72	168457	559914	29063288	-	29795255	29799674				
Metal	44.56	94.02	15.62	154.2	917.02	342.02	16.85	813.29	209.43	13172.34	-	15470.95	15625.15				
Haryana																	
Ore	-	-	-	-	22580000	-	31330000	-	-	-	-	-	53910000	53910000			
Metal	-	-	-	-	32187.8	-	54032.8	-	-	-	-	-	86220.6	86220.6			
Odisha																	
Ore	-	-	-	-	12692	636	-	-	1166	1000	-	-	15494	15494			
Metal	-	-	-	-	34.63	500.78	-	-	22.2	10	-	-	567.61	567.61			

Figures rounded off.

TIN

Table – 2 : Principal Producers of Tin Concentrates, 2018-19

Name & address of the producer	Location of the mine	
	State	District
Chhattisgarh Mineral Dev. Corp. Ltd, Sona Khan Bhawan, Ring Road No.1, Raipur- 492 006 Chhattisgarh.	Chhattisgarh	Dantewada
Precious Minerals and Smelting Ltd, Semi Urban Industrial Estate, Frezerpur, Jagdalpur - 494 001, Chhattisgarh.	Chhattisgarh	Dantewada

Table – 3 : Production of Tin Concentrates, 2016-17 to 2018-19 (By State)

(Quantity in kg; Value in ₹'000)

State	2016-17		2017-18		2018-19 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	12121	8736	16758	11347	21211	13839
Chhattisgarh	12121	8736	16758	11347	21211	13839

Table – 4 : Production of Tin Concentrates, 2017-18 and 2018-19 (By Sectors/State/District)

(Quantity in kg; Value in ₹'000)

State	No. of mines	2017-18		No. of mines	2018-19 (P)	
		Quantity	Value		Quantity	Value
India	6	16758	11347	5	21211	13839
Public sector	1	14227	9010	1	20054	13119
Private sector	5	2531	2338	4	1157	720
Chhattisgarh	6	16758	11347	5	21211	13839
Dantewada	6	16758	11347	5	21211	13839

Table – 5 : Mine-head Closing Stocks of Tin Concentrates, 2017-18 & 2018-19 (By State)

(In kg)

State	2017-18	2018-19 (P)
India	5135	9315
Chhattisgarh	5135	9315

Table – 6 : Production of Tin Metal 2016-17 to 2018-19

(Qty in kg; Value in ₹'000)

Year	Production	
	Quantity	Value
2016-17	-	-
2017-18	13741	15459
2018-19 (P)	7436	8918

MINING

In Govindpal-Tongpal area of Dantewada district, Chhattisgarh, tin in the form of cassiterite is being mined from the sediments deposited in the streams. The stream sediments are dug manually with conventional implements. Subsequent panning of these sediments helps in separating the lighter gangue minerals, while the heavier part is recovered as cassiterite. Chhattisgarh is the only tin producing State in India. Tin ore is known as cassiterite, which was reported in Dantewada district (Bastar district in formerly Madhya Pradesh) by the Directorate of Geology and Mining and was found being associated with the lepidolite-bearing pegmatites. CMDC has an arrangement of collecting tin ore from cooperative societies of tribals in district-Dantewada, Chhattisgarh. The Precious Minerals & Smelting Limited (PMSL) (An ISO 9001:2000 Company), is a flagship Company of Lunia Group. The PMSL is the first Joint Venture Company setup with the Chhattisgarh Mineral Development Corporation Limited (A Government of Chhattisgarh Enterprise), for identification, exploration and exploitation of tin-bearing areas of Chhattisgarh State. The PMSL has commissioned a tin manufacturing facility at Jagdalpur.

USES & SPECIFICATIONS

Tin, as a metal, is the most preferred and environment-friendly packing material. Tin plate, a value-added flat steel product, is a versatile packaging substrate used in edible oils, paints, pesticides, processed foods, beverages and other industries. As a pure metal, it can be used in storage tanks for pharmaceutical chemical solutions, in capacitors, electrodes, fuse-wires, ammunitions, tinned iron sheets to protect victuals, sweets or tobacco, etc. The tin plate is manufactured by depositing tin on iron plate of thickness ranging from 0.17 mm to 0.60 mm. IS 1993:2006 (fourth revision, Reaffirmed Sept. 2011) specifies the requirement for cold reduced electrolytic tin plate. The specifications for tin ingot which is to be used for various purposes is as per IS : 26:1992 (Fourth Revision, Reaffirmed Feb. 2014). There shall be two grades of tin ingot, viz, Sn 99.85% and 99.75%. BIS has prescribed IS : 4280-1992 (Reaffirmed Feb. 2014) for refined secondary tin ingots.

Tin readily forms alloys with other metals to create useful materials, such as, solders, bronzes and fusible alloys. Tin with lead forms an excellent alloy which melts at very low temperature and is used as solders in electronics or as a seal in plumbing. Tin is used in making fusible alloys to be used in safety devices, such as, fire sprinklers, pressure cookers, boiler plugs and electrical fuses. Powder containing 60% silver, 27% tin and 13% copper when mixed with appropriate quantity of mercury forms excellent dental amalgam to be used for filling dental cavities.

Tin is used in cast iron to improve the microstructure and it results in higher uniform hardness. Tin bronzes are used for making gears, tubing, springs and plumbing fitments and for making bearings. Tin is also used in making high-tech alloys, such as, zirconium-tin, used for cladding the fuel elements in thermal nuclear reactors and a niobium-tin-intermetallic compound used in certain high-performance superconducting fields, such as, in high-energy physics.

Tin oxide-based catalysts are used in air purification system, gas sensors and CO₂ lasers. Organotin compounds are used in agrochemicals and antifouling paints in seafaring vessels. Float Glass Industry is an important user of tin, it utilises a method of floating molten glass over a huge vat of molten tin. Pure tin in molten form is used to provide a flat surface as well as fire-polish on both sides of float glass which solidifies on it. It is also used in the production of lead crystal glass. Tin oxide films thicker than 1 mm on glass, produce a transparent, yet electrically conductive layer. This layer is used in de-icing windscreen, antistatic glassware, security alarm, etc.

Tin has established a long-term future as an innovative, competitive and sustainable material. A new low cost, efficient and environment-friendly solar cell has been developed that uses tin instead of the hazardous lead. Tin, known as fuel catalyst, can save energy and reduce emissions when added to fuel. Tin is also considered as synergist for replacement of antimony fire retardants used in most plastics. Tin can make lithium ion batteries last more than three times longer. Tin and zinc work well together to heal wounds and kill bacteria, enabling use in new range of animal healthcare products. Electrolytic Tinplate undoubtedly enjoys the pride of place as a packaging medium especially of food.

POLICY

As per the Foreign Trade Policy, 2015-20, there are no restrictions on the export and import of tin ores and concentrates.

INDUSTRY/CONSUMPTION

In India the main consumers of tin are the Tin Plate Industry and Solder Industry. The latter advancing to become the biggest single end-use sector, over the last decade. The domestic tin plate market is categorised broadly into three basic packaging market segments-edible oil/vanaspati & cashew, processed food and non-processed food. The consumption in IT Industry and in food/beverages Packaging Industry has increased in the recent years. Tin plate companies, namely, Tin Plate Company of India Ltd, JSW Steel Ltd, GPT Steel Industries Ltd, Vardhaman Industries Ltd, SAIL's Rourkela Steel Plant, Kaira Can Company Ltd, Hindustan Tin Works Ltd etc. use tin metal in appreciable quantities for the manufacture of tin plate.

The Tin Plate Company of India Ltd consumes tin at its Golmuri Works, Jamshedpur in East Singhbhum, Jharkhand. TCIL is the pioneer and leading producer of tin mill products in India. It was incorporated in 1920 and has evolved as one of the important regional players in Asia. The Company is a subsidiary of Tata Steel Limited with the parent company holding 74.96% stake in TCIL. The manufacturing facility of the Company is located at Jamshedpur in the State of Jharkhand with an installed capacity of tinning line 3,79,000 tonnes per annum. It caters to 68% of the prime tinplate market and 45% of the overall domestic market. TCIL produced 3,48,520 tonnes & 3,43,615 tonnes of Electrolytic Tinplate in the year 2017-18 & 2018-19, respectively. Similarly in cold rolling mill during 2017-18 and 2018-19, the C.R. products produced were of 3,66,778 tonnes and 3,74,295 tonnes, respectively. GPT Steel Industries Ltd an ISO 9001:2008 accredited unit, was established in 2003 to manufacture Cold rolled products & Tinplate products. GPT is 2nd largest producer of tin plate in India with largest capacity for producing tin plates. GPT Steel has set up two complete Cold Rolling Mills (4Hi & 6Hi Mill) and state-of-the-art Electrolytic Tinplate Line (ETL) located at Gandhidham, Kuchchh district, Gujarat.

Tin plate consumption in India grew by 6% in 2018-19 primarily driven by paints and aerosol end-use segments both of which have been growing at the rate of 8%.

SUBSTITUTES

The most important use of tin is in making packing materials, as it is environment-friendly. Aluminium, glass, paper, plastic, or tin-free steel are among the major substitute for tin. A number of materials can replace tin in its various applications, such as, tetrapack for liquid food items; plastic/polycontainers for solid, semi-solid food; aluminium, glass, tin-free steel can be used in place of tin cans and containers. Tin-Free Steel (TFS) is an electrolytic chrome plated steel consisting of a thin layer of chromium and a layer of chromium oxide deposited on the steel base which gives it a beautiful, lustrous metallic finish on both sides. TFS offers outstanding corrosion resistance, lacquer adhesion as well as printability. Additional features of TFS are filiform rust resistance, sulphur blackening resistance and coating. For tin solders new epoxy resins; for bronze-aluminium alloys, copper-base alloys and plastic; plastic for bearing metals that contain tin; compounds of lead and sodium for some tin chemicals are the other substitutes now in use in place of tin.

WORLD REVIEW

The world reserves of tin metal estimated in 2019 were 4.7 million tonnes, located mainly in China (23%), Indonesia (17%) and Brazil (15%). The world reserves of tin by principal countries are furnished in Table-7.

The world mine production of tin in 2017 & 2018 was constant at 3,52,000 tonnes (Table-8). China which continued to be the largest producer of tin in 2018 with about 34% share in the total world production was followed by Indonesia (24%) and Myanmar (16%).

According to a report 'Tin for the Future' published by International Tin Association, formerly International Tin Research Institute Ltd (ITRI), the world's 10 leading refined tin producers contributed around 73% of total Tin production in 2017 i.e. Yunnan Tin Group Co. Ltd (China), PT Timah (Persero) Tbk. (Indonesia), Malaysia Smelting Corp. Bhd. (Malaysia), Rahman Hydraulic Tin Sdn Bhd (Malaysia), Minsur S.A. (Peru), Mineração Taboca S/A (Brazil), Operaciones Metalúrgicas SA (Bolivia),

Thailand Smelting and Refining Co. Ltd (Thailand), Metallo Chinique International N.V. (Belgium) and Fenix Metals (Poland).

A generalised view of the development in various countries, along with country-wise description sourced from latest available publication of Minerals Yearbook of 'USGS' 2016 are presented as below:

Australia

AusTin Mining Ltd recommenced production at the Granville tin processing plant in Tasmania. Initially, the existing tailings at the site were retreated at the plant and later in the year processing of stockpiled ore was taken up. AusTin Mining was also in the process of obtaining the necessary regulatory approval for an expansion project at Granville, which included resuming mining at the site and increasing tin-concentrate production to about 550 metric tons per year (t/yr).

The Federal Court of Australia rejected the merger proposal between Kasbah Resources Ltd and Asian Mineral Resources Ltd. The merger had the approval of the Kasbah Board of Directors and 90% of the shareholders, but the minority shareholders objected, citing an error in the valuation of their shares. The court ordered Kasbah to pay the minority shareholders reasonable costs, including at least 50% of the previous court hearing costs. Kasbah Resources owned the Achmmach deposit in Morocco, which has been projected to produce up to 7,000 t/yr. when the merger failed, Pala Investments Ltd purchased a 19.9% stake in Kasbah for \$2.7 million (3.23 million Australian dollars), allowing Pala Investments to appoint two representatives to the Kasbah Board.

China

Nine of China's tin producers agreed to cut production by a combined 17,000 tonnes for the year, citing low prices. Participants in this production cut included Yunnan Tin, China Tin and Chengfeng. The total tin production of all participating Companies was around 1,40,000 tonnes, equivalent to 80% of China's tin production, or 40% of global tin production in 2015. Tin smelters in Guangxi Zhuang Autonomous Region and Jiangxi and Yunnan Provinces suspended or scaled back production, reportedly for Government-mandated special environmental inspections. Inspection teams were sent to eight Provinces where most of the country's non-ferrous metals production

took place, and inspections were mostly completed by the end of August. Smelters gradually built their production levels back up to previous levels when the inspections had been successfully completed. In September, only four smelters remained closed, which represented 18% of China's annual refined tin production.

Indonesia

PT Refined Bangka Tin closed its smelting and refining facility and stopped tin production, citing low tin prices and stringent environmental regulations. The Company announced that the refinery would be dismantled and the site would be turned into a conservation area. PT Refined Bangka Tin typically exported about 5,000 t/yr of tin. According to the results of an audit carried out by Indonesia's Ministry of Energy and Mineral Resources, only 29 out of 47 tin smelters in the Bangka-Belitung Islands Province were in operation in 2015, The tin smelting capacity utilisation rate in the Province, which accounted for approximately 90% of Indonesia's tin production, was only around 20%. The audit also showed that of the 755 Companies that held a license to operate, only 498 had a "clean and clear" certification. The "clean and clear" certification had been required since November 1, 2015.

Brazil

Brasil Manganês Corporation Mineração S.A. (BMC) (a subsidiary of Meridian Mining S.E.) signed an agreement with Cooperativa de Garimpeiros de Santa Cruz Ltda. and Cooperativa Metalúrgica de Rondônia Ltda. to reprocess tailings from the Bom Futuro Mine in the Ariquemes District, Rondonia State. BMC also gained the first right of refusal on either the acquisition of the mineral rights or the provision of underground mining services in the area and could secure up to 80% of the unexplored area surrounding the mines.

Myanmar

Myanmar accounted for most of China's tin concentrate imports in 2016, supplying 4,72,506 t of tin ore and concentrates containing an estimated 57,000 t of tin. Approximately 18% of this was believed to be from Wa County government stocks. Myanmar's ore continued to be produced predominantly in Wa County, or Wa Special Region 2 in northern Shan State, close to the border with China.

**Table – 7 : World Reserves of Tin
(By Principal Countries)**

(In '000 tonnes of tin content)

Country	Reserves
World : Total (rounded off)	4700
Australia	420 ⁶
Bolivia	400
Brazil	700
Burma	100
China	1100
Congo (Kinshasa)	150
Indonesia	800
Laos ^(e)	NA
Malaysia	250
Peru	110
Russia	350
USA	-
Vietnam	11
Other countries	350

*Source: USGS, Mineral Commodity Summaries, 2020.
6: For Australia, Joint Ore Reserves Committee-compliant reserves were about 2,50,000 tonnes.*

**Table – 8 : World Mine Production of Tin
(By Principal Countries)**

(In tonnes of metal content)

Country	2016	2017	2018
World: Total	305000	352000	352000
Australia	6635	7402	6871
Bolivia	17804	18385	17251
Brazil	15183	17081	17000 ^(e)
Myanmar ^(e)	57000	68000	55000
China	97165	105000 ^(e)	120000 ^(e)
Congo, Rep. of	6503	10391	8950
Indonesia	69500	83200	84000
Laos	1005	975	1400
Malaysia	4158	4819	3836
Nigeria	3443	8626	7853
Peru (a)	18789	17790	18601
Rwanda (k)	2236	2999	2979
Vietnam	4468	4950	5470
Russia	627	1011	1530
Other countries	603	1002	841

*Source: BGS, World Mineral Production, 2014-2018.
(a) Recoverable
(k) Exports*

FOREIGN TRADE**Exports**

There were negligible exports of tin ores & concentrates during both the year 2017-18 and 2018-19. Exports of tin & alloys including scrap declined by 14% to 858 tonnes in 2018-19 as compared to 996 tonnes in the preceding year. Out of total exports in 2018-19, tin & alloys was only 539 tonnes (63%), tin & alloys (worked) at 318 tonnes (37%) and tin waste & scrap were negligible. Exports of tin & alloys were mainly to Republic of Korea, (45%), UAE (27%), UK (7%), Nepal & Taiwan, (3% each) and Sri Lanka ,(2% each) (Tables - 9 to 17).

**Table – 9 : Exports of Tin Ores & Conc.
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	++	3	++	54
Nigeria	-	-	++	54
Nepal	++	3	-	-

Figures rounded off

**Table – 10 : Exports of Tin & Alloys Incl. Scrap
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	996	762618	858	718270
UAE	191	221791	151	248547
Korea, Rep. of	244	193165	243	197921
UK	52	68163	40	67875
Sri Lanka	20	44942	15	35572
Nepal	261	21343	280	31104
South Africa	56	36130	12	22114
Taiwan	7	7137	14	17781
USA	25	29882	11	17461
Uganda	5	6846	9	13579
Bangladesh	5	4468	8	9870
Other countries	130	128752	75	56447

Figures rounded off

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**Table – 11 : Exports of Tin & Alloys
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	569	712543	539	688879
UAE	136	213537	148	247497
Korea, Rep. of	244	193133	243	197848
UK	40	65011	38	67277
Sri Lanka	18	40727	13	33038
Nepal	7	8914	15	20088
South Africa	17	31678	9	20047
Taiwan	7	7137	14	17781
USA	22	28546	10	16687
Uganda	5	6803	9	13548
Bangladesh	4	4120	8	9558
Other countries	69	112938	31	45510

*Figures rounded off***Table – 12 : Exports of Tin & Alloys:Worked
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	424	47468	318	28781
Nepal	252	12092	264	10811
Netherlands	3	320	19	3432
Sri Lanka	2	4215	2	2534
South Africa	39	4452	4	2066
Sudan	4	632	2	1283
Tanzania	-	-	5	1213
Qatar	2	671	1	1046
UAE	54	8254	3	1007
Germany	1	539	2	621
UK	12	3152	1	599
Other countries	55	13140	15	4170

*Figures rounded off***Table - 13 : Exports of Tin Waste & Scrap
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	4	2607	2	127
Bangladesh	-	-	-	11
USA	-	-	++	241
Nepal	2	336	2	205
Belgium	-	50	++	50
UAE	-	-	++	43
Malaysia	-	45	++	29
Uganda	-	-	++	19
New Zealand	-	-	++	8
Bhutan	-	64	++	2
Ethiopia	-	1	-	-
Other countries	2	2111	-	-

Figures rounded off

**Table - 14 : Exports of Tin & Alloys : NES
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	329	326990	329	329848
Korea, Rep. of	244	193133	243	197848
UK	40	64915	38	67277
UAE	15	27545	18	21781
Taiwan	7	6870	14	17472
USA	1	828	6	10464
Bangladesh	3	3868	5	6772
Singapore	-	-	2	2694
Oman	3	4442	1	2181
Hong Kong	-	-	1	1337
Nepal	4	6402	++	936
Other Countries	12	18987	++	1087

Figures rounded off

**Table - 16 : Exports of Tin Blocks
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	1	1909	5	6094
Nepal	++	121	2	3213
Oman	1	1539	2	1934
Germany	-	-	1	529
USA	++	26	++	128
Japan	-	-	++	117
Chile	-	-	++	60
UAE	-	-	++	51
Singapore	-	-	++	23
South Africa	-	-	++	19
Saudi Arabia	-	-	++	9
Other countries	++	222	++	12

Figures rounded off

**Table - 15 : Exports of Tin : Anode, Cathode. etc of
Tin Unwrought
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	71	106554	46	65609
Nepal	1	2131	12	15839
Uganda	4	6640	9	13538
UAE	7	9944	7	11613
Ethiopia	1	1797	6	9530
Saudi Arabia	10	14155	5	7776
Nigeria	1	1223	3	4041
Oman	1	1074	1	1964
Kuwait	++	22	1	878
Bangladesh	1	252	1	303
Sri Lanka	++	79	++	39
Other countries	44	69237	++	88

Figures rounded off

**Table - 17 : Exports of Tin (Scrap)
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	4	2607	2	610
USA	-	-	++	241
Nepal	2	336	2	205
Belgium	++	50	++	50
UAE	-	-	++	43
Malaysia	++	45	++	29
Uganda	-	-	++	19
Bangladesh	-	-	++	11
New Zealand	-	-	++	8
Bhutan	++	64	++	2
Sudan	1	1408	-	-
Other countries	1	704	++	++

Figures rounded off

Imports

The imports of tin ores & concentrates in 2018-19 were at 6 tonnes and as compared to 57 tonnes in the previous year and were solely from Tanzania (100%). Imports of tin & alloys including scrap were at 11,262 tonnes in 2018-19 from 12,201 tonnes recorded in the previous year. Imports of tin and alloys were mainly from Indonesia (53%), Singapore (26%) and Malaysia (14%) and China (4%). In 2018-19, imports of tin & alloys were at 10,908 tonnes in 2018-19 as compared to 11,987 tonnes last year. Imports of tin & alloys (worked) were at 353 tonnes, while imports of tin alloys (NES) were at 102 tonnes. (Tables -18 to 26).

Table – 18 : Imports of Tin Ores & Conc. (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	57	56980	6	1259
Tanzania	-	-	6	1225
UK	-	-	++	34
France	40	47341	-	-
Kenya	17	9639	-	-

Figures rounded off

Table – 19 : Imports of Tin & Alloys, Incl. Scrap (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	12201	15775528	11262	15780751
Indonesia	7399	9420405	5974	8349184
Singapore	146	199546	2885	4192214
Malaysia	4197	5691563	1599	2331107
China	291	148716	502	408003
Germany	62	105761	95	143365
Korea, Rep. of	42	106029	39	104154
Japan	19	38497	24	58474
Hong Kong	9	10902	43	44930
Thailand	-	-	25	37931
Taiwan	12	17116	19	30362
Other Countries	24	36993	57	81027

Figures rounded off

Table – 20 : Imports of Tin & Alloys (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	11987	15647701	10908	15550620
Indonesia	7399	9420405	5974	8349184
Singapore	143	184616	2876	4178876
Malaysia	4197	5690470	1595	2321336
China	126	112579	265	333193
Germany	59	95640	72	123610
Korea, Rep. of	40	104112	39	104086
Thailand	--	--	25	37931
Taiwan	12	17012	19	30362
Japan	4	10292	7	21350
Switzerland	++	6	11	16721
Other countries	7	12569	25	33971

Figures rounded off

Table – 21 : Imports of Tin & Alloys : Worked (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	215	127648	353	229740
China	165	35958	237	74810
Hong Kong	9	10902	38	42345
Japan	15	28205	17	36733
Germany	3	10121	23	19755
Italy	12	19674	10	17243
Singapore	3	14930	9	13339
Malaysia	1	1093	4	9771
Spain	++	23	5	6245
UAE	++	191	9	5308
UK	++	512	1	1725
Other countries	7	6039	++	2466

Figures rounded off

Table – 22 : Imports of Tin (Scrap) (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	++	179	1	390
Japan	-	-	1	390
China	++	179	-	-

Figures rounded off

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**Table – 23 : Imports of Tin Alloys, NES
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	69	117669	102	170062
Germany	54	86682	66	111291
Malaysia	10	20230	32	50239
Singapore	2	2856	4	7696
USA	++	5	++	535
UK	-	-	++	286
Canada	-	-	++	15
Japan	2	7079	-	-
China	1	762	-	-
Czech Republic	++	55	-	-

*Figures rounded off***Table – 24: Imports of Tin & Alloys : Worked
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	271	350328	298	422695
Italy	-	-	-	-
Spain	-	-	-	-
China	126	111700	141	143368
Korea, Rep. of	40	103034	39	102830
Singapore	65	77583	61	83555
Japan	1	3213	7	21350
Taiwan	6	9114	12	19024
Malaysia	17	21151	10	14550
Germany	5	8833	6	11813
Canada	5	8018	7	11304
Indonesia	5	4714	7	7066
Hong Kong	-	-	5	2585
Other countries	1	2968	3	5250

Figures rounded off

**Table – 25: Imports of Tin: Anode, Cathode Etc of Tin Unwrought
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	11642	15171496	10503	14946179
Indonesia	7394	9415691	5967	8342118
Singapore	76	104177	2811	4087624
Malaysia	4171	5649089	1554	2256546
China	++	118	125	189825
Thailand	-	-	25	37931
Switzerland	-	-	11	16721
Vietnam	-	-	10	13834
Korea, Rep. of	++	1077	++	1255
Germany	++	32	++	130
UK	++	119	++	78
Other countries	1	1193	++	117

Figures rounded off

**Table – 26 : Imports of Tin Blocks
(By Countries)**

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	5	8209	7	11680
Taiwan	5	7898	7	11272
Germany	++	93	++	376
UK	-	-	++	32
Ukraine	++	218	-	-

Figures rounded off

FUTURE OUTLOOK

According to the analyses put out by International Tin Association (ITA) the latest estimate of refined tin use in 2018 is 3,72,000 tonnes based on data from 2019 survey. The demand for refined tin reported by survey participants increased by 2% from 2017, roughly in line with global estimates. However, the survey suggests that the demand for tin will contract during 2019, primarily as a result of an unstable macroeconomic environment. The global demand for tin was forecasted to decline in 2019 because of weakening global manufacturing and supply chain issues, mainly linked with the US-China trade war.

World tin reserves appeared to be adequate to meet short-term demand. Secondary sources of tin are likely to become an increasingly important component to meet supply demands especially in the United States. Domestic tin requirements are expected to continue to be met primarily through imports.

The per capita consumption of tinplate in India is considerably low when compared to many developed countries and developing economies like China. High growth in modern retail, FDI in multi-brand retail combined with Government's thrust on food processing industries augur well for the growth of Packaging Industry in India which in turn could spur growth of tin consumption in the country.