Indian Minerals Yearbook 2022

(Part- II : METALS AND ALLOYS)

61st Edition

TIN

(ADVANCE RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

Indira Bhavan, Civil Lines,
NAGPUR – 440 001

PHONE/FAX NO. (0712) 2565471
PBX : (0712) 2562649, 2560544, 2560648
E-MAIL : cme@ibm.gov.in
Website: www.ibm.gov.in

February, 2024

17 Tin

Tin is one of the earliest metals known and used mainly in bronze implements. It is a scarce element with 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 78.77% tin. But usually it includes impurities of Nb,Ta, Zr, Sc, W and Fe. The less common tin ore is stannite (Cu_2SnFeS_4). Tin is used mostly for tin plating, soldering special alloys and in the production of 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 1.4.2020 is placed at 83.72 million tonnes containing about 1,03,757 tonnes metal. About 2,101 tonnes ore containing 974 tonnes metal are placed under 'Reserves' category and the bulk, i.e., about 83.72 million tonnes containing about 1,02,783 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. Out of 19,544.58 tonnes, 18,837.16 tonnes are placer deposit. The entire resources of tin are located in Haryana, Chhattisgarh and Odisha. About 64% of the total ore resources are located in Haryana and 36% in Chhattisgarh, while nominal resources have been reported from Odisha as well (Table-1).

EXPLORATION & DEVELOPMENT

The exploration and development details, if any, are covered in the Review on 'Exploration and Development' under 'General Reviews', i.e., Vol.-I of the title. As on 31.03.2021 (P), a total of 15 leases for tin have been granted to the various parties.

PRODUCTION, STOCKS & PRICES

Concentrates

The production of tin concentrates in 2021-22 was at 26292 kg as against 16865 kg in the preceeding year. One public sector and five private sector mines reported production in 2021-22. All these mines are located in Chhattisgarh.

The mine-head closing stock of tin concentrates was 260 kg in 2021-22 as against 8520 kg in 2020-21.

The Chhattisgarh Mineral Development Corporation Ltd. (CMDC) purchases tin concentrates from local tribals, allowing them to collect it from the lease area. Hence, no labour was reported by the mine owned by the CMDC Ltd., where as Precious Minerals and Smelting Ltd. employed 12 workers in the current year and 9 workers in theprevious year. (Tables-2 to 5).

Tin Metal

The plant owned by Precious Minerals and Smelting Ltd. reported production of tin metal was 4868 kg in 2021-22 as against 4337 kg in the preceeding year. The plant is located at Jagdalpur in Dantewada district of Chattisgarh. (Table-6).

Table – 1 : Reserves/Resources of Tin as on 1.4.2020
(By Grades/States)

(In tonnes)

Grade/State	Reserves				Remaining Resources								Total Resources (A+B)
	Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
		STD121	STD122			STD221	STD222						
All India : Total													
Ore	2075	-	25	2101	22594540	3213	31330134	168457	561080	29063370	-	83720794	83722895
Metal	963.19	-	10.8	973.99	33384.66	1116.41	54089.46	813.29	231.63	13147.46	-	102782.91	103756.9
By States													
Chhattisgarh													
Ore	2075	-	25	2101	1791	2560	94	168457	559914	29062361	-	29795176	29797277
Metal	963.19	-	10.8	973.99	1122.95	603.94	29.07	813.29	209.43	13130.9	-	15909.58	16883.57
Haryana													
Ore	-	-	-	-	22580000	-	31330000	-	-	-	-	53910000	53910000
Metal	-	-	-	-	32187.8	-	54032.8	-	-	-	-	86220.6	86220.6
Odisha													
Ore	-	-	-	-	12749	653	40	-	1166	1010	-	15618	15618
Metal	-	-	-	-	73.91	512.47	27.59	-	22.2	16.56	-	652.73	652.73

Figures rounded off.

Table – 2 : Principal Producers of Tin Concentrates, 2020-21

Name & address of the producer	Location of the mine	
	State	District
Chhattisgarh Mineral Dev. Corpn Ltd, Sona Khan Bhawan, Ring Road No.1, Raipur- 492006, Chhattisgarh.	Chhattisgarh	Dantewada
Precious Minerals and Smelting Ltd, Semi Urban Industrial Estate, Frezerpur, Jagdalpur - 494001, Chhattisgarh.	Chhattisgarh	Dantewada

Table – 3 : Production of Tin Concentrates, 2019-20 to 2021-22 (By State)

(Quantity in kg; Value in ₹'000)

State	2019-20		2020-21		2021-22 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**15530**	**10337**	**16865**	**9413**	**26292**	**31979**
Chhattisgarh	15530	10337	16865	9413	26292	31979

Table – 4 : Production of Tin Concentrates, 2020-21 and 2021-22 (By Sectors/State/District)

(Quantity in kg; Value in ₹'000)

State	2020-2021			2021-22 (P)		
	No. of mines	Quantity	Value	No. of mines	Quantity	Value
India	**5**	**16865**	**10337**	**6**	**262292**	**31979**
Public sector	1	13859	7815	1	24813	30522
Private sector	4	3006	2598	5	1479	1457
Chhattisgarh	**5**	**16865**	**10413**	**6**	**26292**	**31979**
Dantewada	5	16865	10413	5	26250	31894
Sukma	-			1	42	85

Table – 5 : Mine-head Closing Stocks of Tin Concentrates, 2020-21 & 2021-22 (By State)

(In kg)

State	2020-21	2021-22 (P)
India	**8520**	**260**
Chhattisgarh	8520	260

(P): Provisional

Table – 6 : Production of Tin Metal 2019-20 to 2021-22

(Qty in kg; Value in ₹'000)

Year	Production	
	Quantity	Value
2019-20	6063	7361
2020-21	4337	5400
2021-22 (P)	4868	7307

MINING

Tin ore is known as cassiterite, which was reported in Dantewada district by the Directorate of Geology and Mining and was found being associated with the lepidolite-bearing pegmatites. 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. CMDC has an arrangement of collecting tin ore from cooperative societies of tribals in Dantewada district of 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 set up 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, 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) has specified 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 CO_2 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 Import Policy, under schedule 1 of ITC (HS) 2022 and export policy under Schedule 2 of ITC (HS) 2022) 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 3,79,000 tonnes per annum. It caters to 60% of the prime tinplate market and 40% of the overall domestic market. TCIL produced 2,90,807 tonnes & 3,74,182 tonnes of Electrolytic Tinplate in the year 2020-21 & 2021-22, respectively. Similarly, in cold rolling mill during 2020-21 and 2021-22, the C.R. products produced were of 3,10,092 tonnes and 3,94,079 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.

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 2022 were 4.6 million tonnes, located mainly in Indonesia (17%), china (16%), Burma (15%), Brazil and Bolivia (9% each). The world reserves of tin by principal countries are furnished in Table-7.

The world mine production decreased marginally by 8% during 2021 to 2,57,000 tonnes as compared to that 2,78,000 tonnes in the preceding year (Table-8). China which continued to be the largest producer of tin in 2021 with contribution of about 31% share in the total world production was followed by Indonesia (13%), Myanmar (12%) and Peru (11%).

A generalised view of the development in various countries, along with country-wise description sourced from latest available publication of Minerals Yearbook of 'USGS' 2018 are presented as below:

China

Effective November 1, China reduced import tariff rates on more than 1,500 products including tin ore (cassiterite ore). The average import tariff rates for all products were reduced to 7.8% from 10.5%. The import tariff rate on tin ore (cassiterite ore) decreased to 5% from 5.5% (Argus Metals International, 2018a;

Yao, 2018). In October, the Gejiu City government of Yunnan Province ordered an estimated 50 ore processing plants to close or agree to relocate to a new industrial park.

Congo (Kinshasa)

A mining law March 2018 which raised mineral royalties in the Democratic Republic of Congo. increased the royalty rate on tin to 3.5% from 2%; increased state ownership of mining projects to 10%; eliminated the 10-year grace period for compliance to the increased royalty rate by existing licensees; imposed a new tax triggered by high commodity prices; and reduced contract stability guarantees to 5 years from 10 years completed the crushing circuit at its Bisie tin minerefinery in Sao Paulo, which produced 6,582 tonne of refined tin in 2017, 12% more than in 2016.

Germany

Thyssenkrupp AG announced an agreement to create a 50–50 joint venture by combining its European steel operations, Thyssenkrupp Steel Europe, with India's Tata Steel BSL Limited. The company expected an annual cost savings of 400 million to 500 million euros ($468 million to $585 million1). The new company would be named Thyssenkrupp Tata Steel B.V. and would create Europe's second largest steel producer with a 50% share of the European market.

Namibia

In October, AfriTin Mining Ltd. completed construction of the phase 1 processing plant at its Uis project. AfriTin Mining Ltd. expected the phase 1 processing plant to process 500,000 metric tons per year (t/yr) of tin ore and produce 720 t/yr of tin concentrate. Phase 2 was planned to increase the plant's processing capacity to 3 million metric tons per year of tin ore producing 66,000 t/yr of tin concentrate. In December, mining commenced at the Uis project followed by tin-ore stockpiling.

Spain.

W Resources Plc began production of tin concentrate at the La Parrilla open pit mine. Initial production rates of 10 to 15 t/mo were expected to increase to full-scale production rates by the second quarter of 2019. At full production, the mine was expected to produce about 500 t/yr of tin concentrate.

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

(In'000 tonnes of tin content)

Country	Reserves
World : Total (rounded off)	**4600**
Australia	[7]570
Bolivia	400
Brazil	420
Burma[e]	700
China[e]	720
Congo (Kinshasa)[e]	130
Indonesia[e]	800
Laos[e]	NA(
Malaysia	NA
Nigeria[e]	NA
Peru	130
Russia	430
Rawanda	430
Vietnam	NA
Other Countries	310

Source: *USGS, Mineral Commodity Summaries, 2022.*
a: For Australia, Joint Ore Reserves Committee-compliant or equvalent reserves were about 2,61,000 tonnes.
e: estimated

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

(In tonnes of metal content)

Country	2019	2020	2021
World: Total (rounded off)	**311000**	**278000**	**257000**
China	85840	94463	80000
Indonesia	77468	52617	34466
Myanmar	50000	36000	32000
Peru[(a)]	19853	20647	26995
Bolivia	17147	14709	19628
Congo, D. Rep. of	12431	13526	15963
Brazil	117000	16893	15517
Australia	7738	8118	8772
Vietnam	6369	6798	6000
Other countries	16815	14570	2143

Source: *BGS, World Mineral Production, 2017-2021*
(a) Recoverable
** Estimated*

United Kingdom

Wolf Minerals Ltd. increased tin outputnat its Drakelands open pit tungsten-tin mine (formerly known as the Hemerdon Mine) in Devon, United Kingdom, to 324 tn of tin in concentrate in fiscal year 2018 (July 1, 2017, through June 30, 2018) from 194 t of tin in concentrate in fiscal year 2017 (July 1, 2016, through June 30, 2017) . In October, Wolf Minerals Ltd. stopped mining at the Drakelands Mine.

FOREIGN TRADE

Exports

There were nil exports of tin ores & concentrates during the year 2020-21 and 2021-22. Exports of tin & alloys including scrap increased by 49% to 1191 tonnes in 2021-22 as compared to 750 tonnes in the preceding year. Out of the total exports in 2021-22, tin & alloys reported 721 tonnes (26%), tin & alloys (worked) was 469 tonnes (62%) and tin waste & scrap were negligible. Exports of tin & alloys including Scrap were mainly to Nepal (38%), UAE (22%) and Korea Rep. of (15%) (Tables - 9 to 17).

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	-	-	-	-

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	750	784385	1191	1494894
UAE	161	286412	263	510605
Korea Rep. of	237	186018	182	252837
U S A	43	27065	68	144506
Saudi Arab	18	28552	39	121274
Belgium	54	66776	62	93261
Sri Lanka Dsr	13	26394	19	69851
U K	20	29999	26	69223
Nepal	106	18939	447	48540
Singapore	++	953	19	47674
Kenya	13	18603	12	20208
Other countries	85	94674	54	116915

Figures rounded off

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

Country	2020-21(R)		2021-22((P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	570	731861	721	1432470
U Arab Emts	160	285280	261	502990
Korea Rp	236	185246	182	252449
U S A	9	12560	52	136279
Saudi Arab	15	23778	39	121274
Belgium	54	66589	62	92103
U K	18	29253	23	68408
Sri Lanka Dsr	10	23424	18	67177
Singapore	++	953	17	42539
Nepal	5	7551	12	19147
Kenya	11	17284	6	18279
Other Countries	52	79943	49	111825

Figures rounded off

Table – 12 : Exports of Tin & Alloys:Worked (By Countries)

Country	2020-21(R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	178	51368	469	62201
Nepal	100	11003	434	29212
U S A	34	14498	16	8227
U Arab Emts	1	1132	2	7609
Singapore	++	++	2	5135
Sri Lanka Dsr	3	2970	1	2674
Kenya	2	1310	6	1929
South Africa	++	8	++	1186
Belgium	++	187	++	1158
U K	2	746	3	814
Qatar	++	764	++	720
Other Countries	36	18750	5	3537

Figures rounded off

Table - 13 : Exports of Tin Waste & Scrap (By Countries)

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	2	1156	1	223
Nepal	1	385	1	181
Bangladesh Pr	-	-	++	23
Bhutan	-	-	++	12
U Arab Emts	-	-	++	6
U K	-	-	++	1
Algeria	-	-	++	++
Swaziland	1	744	-	-
Colombia	++	11	-	-
Kenya	++	9	-	-
U S A	++	7	-	-
Other Countries	-	-	-	-

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	380	423846	349	606809
Korea, Rep. of	236	185246	182	251691
UAE	48	114878	119	221985
U K	18	29253	20	62409
Sri Lanka Dsr	1	4067	3	12434
U S A	1	1396	5	10974
Hong Kong	6	9482	3	6901
Singapore	++	355	3	6092
Japan	2	3327	2	5627
Bangladesh Pr	2	2804	2	4997
Ghana	-	-	2	4525
Other countries	66	73038	8	19174

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	44	70911	128	356713
Saudi Arabia	14	22778	38	119279
U S A	++	493	44	115664
U Arab Emts	6	7930	7	21177
Kenya	11	17284	6	18279
Nepal	4	6570	7	17574
Tanzania Rep	-	-	6	16298
Sri Lanka Dsr	5	7669	7	16157
Congo D. Rep.	2	3274	5	12832
Uganda	++	464	2	6815
Senegal	-	-	2	6044
Other countries	2	4449	4	6594

Figures rounded off

Table – 16 : Exports of Tin Blocks (By Countries)

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	++	547	++	1483
Singapore	-	-	++	835
Nepal	++	6	++	559
Denmark	-	-	++	83
Bhutan	-	-	++	6
Oman	++	537	-	-
Cameroon	++	4	-	-
Fiji Is	++	++	-	-

Figures rounded off

Table – 17 : Exports of Tin (Scrap) (By Countries)

Country	20220-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	2	1156	1	223
Nepal	1	385	1	181
Bangladesh Pr	-	-	++	23
Bhutan	-	-	++	12
U Arab Emts	-	-	++	6
U K	-	-	++	1
Algeria	-	-	++	++
Swaziland	41	744	-	-
Colombia	++	11	-	-
Kenya	+	9	-	-
U S A	++	7	-	-
Other countries	-	-	-	-

Figures rounded off

Imports

The imports of tin ores & concentrates in 2021-21 was negligible as that of the previous year. Imports of tin & alloys including scrap were at 10,809 tonnes in 2021-22 from 110,797 tonnes recorded in the previous year. Imports of tin & alloys were mainly from Indonesia (70%), Singapore (21%) and Malaysia (5%). In 2021-22, imports of tin & alloys were at 10,333 tonnes as compared to 110,382 tonnes in the previous year. Imports of tin & alloys (worked) were at 476 tonnes, while imports of tin alloys (NES) were at 79 tonnes. (Tables -18 to 26).

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**2**	**899**	**++**	**299**
Korea Rp	++	131	++	244
Cameroon	-	-	++	37
U S A	—	—	++	16
Nigeria	2	768	++	2

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**10797**	**14848133**	**10809**	**28696669**
Indonesia	7517	10413091	7209	19284978
Singapore	1331	1822729	2142	6081353
Malaysia	1145	1712445	608	1936557
China P Rp	415	234296	419	296370
Japan	25	56106	95	246153
Germany	61	95835	85	228023
Korea, Rep. of	34	86007	71	216989
Tanzania Rep	164	268817	44	116193
Taiwan	16	28570	28	78801
Myanmar	-	-	22	71139
Other countries	89	130237	86	140113

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**10382**	**14585191**	**10333**	**28331809**
Indonesia	7517	10413091	7209	19284978
Singapore	1331	1821181	2136	6065498
Malaysia	1122	1677012	599	1912094
Korea Rp	29	84814	54	212469
Germany	59	89456	79	211035
Japan	1	3186	79	197974
China P Rp	81	104787	69	136324
Tanzania Rep	164	268817	44	116193
Taiwan	16	28570	28	78716
Myanmar	-	-	22	71139
Other countries	62	94277	14	45389

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**415**	**262942**	**476**	**364860**
China P Rp	334	129509	350	160046
Japan	24	52920	16	48179
Hong Kong	14	9634	51	43674
Italy	8	12772	12	29383
Malaysia	23	35433	9	24463
Germany	2	6379	6	16988
Singapore	++	1548	6	15855
Spain	5	6486	7	12952
U S A	++	1219	1	6540
Korea Rp	5	1193	17	4520
Other countries	++	5849	1	2260

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	--	--	--	--
Singapore	--	--	--	--
China	--	--	--	--

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	73	145069	79	213609
Germany	50	78695	73	195272
Malaysia	19	59383	5	15528
Singapore	1	1073	1	2460
Italy	1	1716	++	115
Japan	-	-	++	114
Poland	-	-	++	56
Hong Kong	2	3098	++	31
U K	-	-	++	27
Bangladesh Pr	-	-	++	5
China P Rp	++	596	++	1
Other Countries	++	508	++	++

Figures rounded off

Table – 24: Imports of Tin & Alloys : Worked
(By Countries)

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	217	344238	309	810355
Korea, Rep. of	29	83511	54	211267
China P Rp	81	104191	69	136323
Malaysia	33	50716	43	133210
Singapore	26	39863	44	117831
Indonesia	20	17514	60	100386
Taiwan	10	18541	20	57325
Germany	9	10652	6	15292
Hong Kong	2	6028	4	11436
Canada	6	9274	3	10419
Japan	1	3186	4	5925
Other countries	++	762	2	10941

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	10085	14084187	9937	27285876
Indonesia	7497	10395577	7149	19184592
Singapore	1304	1780242	2091	5945207
Malaysia	1070	1566913	551	1763356
Japan	-	-	75	191935
Tanzania Rep	164	268817	44	116193
Myanmar	-	-	22	71139
Spain	-	-	3	6743
Peru	-	-	2	4953
Korea Rp	++	1138	++	1079
U S A	++	56	++	533
Other countries	50	71444	++	146

Figures rounded off

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

Country	2020-21 (R)		2021-22 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	7	11697	8	21969
Taiwan	6	10029	8	21391
Germany	-	-	++	455
Korea, Rep. of	++	165	++	123
Finland	1	1500	-	-
Singapore	++	3	-	-

Figures rounded off

FUTURE OUTLOOK

According to the analyses put out by International Tin Association (ITA), the world demand for tin would raise to 50,000 tonnes per year by 2025. Provisional estimates of total global tin use, including refined and unrefined forms, totalled 4,36,100 tonnes in 2021, up 3.9% from that of 2020. The Recycling Input Rate (RIR) was calculated to be 28.21% in 2021 and is forecast to increase slightly to 28.5% in 2022.

During the year 2021-22 demand for Tin plate in domestic market increased by 4%. In addition, the Government's focus on the rural economy and farm sector is expected to boost overall consumption and this is evident in policies being showcased by the Ministry of Food Processing Industries at various Industry workshops and exhibitions.

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. As per global tin market overview of ITA, around 3,86,100 tonnes of refined tin were produced in 2021, 30% of which was from recycled sources.

The per capita consumption of tin plate in India is considerably low (0.49kg per capita) when compared to many developed countries (8-12kg per capita) and developing economies like China (4.75kg per capita). 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.

The feedstock supply of and consumer demand for tin is expected to be steady throughout the near term. World tin reserves appear to be adequate to meet any short-term demand.