

# Mineral Industry Surveys

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## TIN IN JUNE 2002

Domestic consumption of primary tin in June was estimated by the U.S. Geological Survey to be about 6% lower than that in May and about 6% higher than that in June 2001. The Platts Metals Week average composite price for tin in June was \$3.05 per pound, an increase of 3% from that in May and a decrease of 9% from that in June 2001.

The 7th International Tin Conference, sponsored by Tin Technology Ltd., Metal Bulletin, and Yunnan Tin Company was held May 19-21, in Kunming, China. More than 100 delegates from the global tin industry attended. Several topics addressed at the conference are as follows (Metal Bulletin, 2002):

**China's Tin Industry.**—From 1993 until 2000, Chinese tin production increased at a rate of about 13% annually. In 2000, total annual output reached 112,000 metric tons (t). However, since late 2000, the Chinese tin industry has been affected by weak world tin prices. In recent years, the oversupply of tin in the Chinese market was attributed to a large number of smaller mines and smelters. Stricter laws regulating mineral mining and smelting have now been instituted; illegal mines and smelters have been shut down. Thus far, over 230 tin mines or smelters have been closed.

China ranks as the world's top tin producer with a 35% share of the global market. In 2001, China exported 46,000 t of refined tin, about 27% less than in 2000. It was reported that the Chinese Ministry of Foreign Economy and Trade would only allow 50,000 t of tin to be exported in 2002. China also has become the world's second largest tin user, after the United States. The Yunnan Tin Company, China's major producer, halted tin production for two months in 2001 to reduce an oversupply situation.

**Liuzhou China Tin Group.**— This organization has become China's second largest tin producer; it is involved in mineral exploration, mining, dressing, smelting, and marketing of non-ferrous metals including tin, lead, zinc, antimony, indium, silver, and cadmium. Liuzhou's annual capacity for tin, antimony, and indium has reached 25,000 t, 15,000 t, and 41 t,

respectively. In 2001, tin ingot production was 10,600 t. Over the next five years, the output may reach 35,000 t annually.

**The Indonesian Tin Mining Industry.**—PT Timah is the country's largest tin producer and its tin mining operations are a substantial part of the largest geologic tin belt in the world, the "South East Asian Tin Belt," stretching some 3,000 kilometers from Myanmar (Burma) to South Sumatra. Prior to 1997, Indonesia was considered one of the most favorable countries for mining investment. However, declining economic conditions in the country in recent years have severely restricted investment. Illegal tin mining operations also have hampered Timah's performance.

**Ausmelt Tin Smelting Technology.**—The tin smelting industry is moving toward the use of intense bath smelting techniques to replace conventional reverberatory technology. The most recent commercial scale tin smelter built utilizing Ausmelt smelting technology was recently installed at Yunnan Tin Corp.'s smelter in Geijiu City, China. The design capacity of this Ausmelt tin plant is 50,000 metric tons per year (t/yr) of tin concentrate. The existing tin smelter is being upgraded with a single Ausmelt furnace to replace seven existing reverberatory furnaces. The process at Yunnan Tin will essentially conform to a two-stage process of smelting and slag reduction. However, the smelting circuit will be integrated with existing slag fuming furnaces. Ausmelt technology provides flexibility to accept a range of both low- and high-grade tin feed materials. When the Yunnan Tin Smelter begins operating at design capacity, about 30% of the world's refined tin will be produced with Ausmelt technology.

**Russian Tin Industry.**—In contrast to many other countries, a major part of Russia's tin resources (86%) are lode deposits and only 14% are placer deposits. Russian tin resources that are economically viable account for less than 30% of all resources of tin in the country. Moreover, Russia's largest tin deposits contain only low-grade ore. Ore treatment capacity and production of tin concentrate decreased significantly in the

1990s. Nearly all the metallurgical treatment of tin concentrate occurs in one plant, the Novosibirsk Integrated Tin Works. Currently, production capacity at Novosibirsk is over 20,000 t/yr (Tin International, 2002). Novosibirsk announced that it was seeking investment to revive production at its ailing mines. In order to return tin smelter output to full capacity, the company is also seeking to import more tin concentrate through its London-based affiliated trading firm, Russian Tin Sales. The Molodyozhny and Perevalny tin mines, both belonging to the Novosibirsk-owned mining company Dalnevostochnaya, ceased operations in early 2002. In 2001, Novosibirsk produced 5,000 t of tin metal, compared to 13,000 t in 1995 (Metal Bulletin, 2002).

In Europe, the "euro" coin was officially introduced January 1, 2002, and has become legal tender in 12 of 15 European Union countries. The material for the 10-, 20-, and 50-cent pieces is "Nordic Gold," a copper-aluminum-zinc-tin alloy that allegedly is difficult to counterfeit (Advanced Materials and Processes, 2002).

The proposed merger between Anglo-Dutch steelmaker Corus and major Brazilian Steel producer Companhia Siderurgica Nacional (CSN) will create the world's largest tinplate producer, with a combined tinplate capacity of 2.9 million metric tons (Mt) yearly. Corus announced that it will hold 62% of the new firm. The Corus tin mill in Ebbw Vale, Wales, was shut down in July. The closure means that Corus' tinplate supply will be focused at the IJmuiden plant (Netherlands). CSN's tin mill at its Volta Redonda Works has a tinplate capacity of 1.1 Mt (Canmaker, 2002).

In England, the compulsory liquidation of RGB Resources plc led to the acquisition of RGB's Vinto (Bolivia) tin smelter by Cia Minera del Colquiri (CMC), a joint venture between

Compania Minera del Sur (Comsur) and the UK-based Commonwealth Development Corporation (CDG Capital Partners). Vinto draws 40% of its concentrate feed from Huanuni, the tin mine formerly operated by RBG, but now controlled by COMIBOL, the Bolivian mining organization (Tin International, 2002).

The Metal Processing Association has commissioned its first tin furnace at its smelter in Rwanda. The smelter is slated to produce 200 t/yr of refined tin, with the furnace expected to reach full production before yearend (Ryan's Notes, 2002b).

South Africa soon will have a new tin smelter, owned by Phamine Mining. Phamine currently processes tin scrap. By early 2003, Phamine hopes to have a single furnace smelter producing 120 t of refined tin monthly (Ryan's Notes, 2002a).

### **Update**

On August 16, 2002, the Platts Metals Week composite price for tin was \$2.83 per pound.

### **References Cited**

- Advanced Materials and Processes, 2002, Euro coin blanks produced by the billion: Advanced Materials and Processes, v. 160, no. 7, July, p. 4.
- Canmaker, The, 2002, Corus/CSN to become tinplate leaders: The Canmaker, v. 15, August, p. 16.
- Metal Bulletin, 2002, Novosibirsk seeks investors to revive tin mining: Metal Bulletin, no. 8677, May 27, p. 8.
- Ryan's Notes, 2002a, DLA will offer 7,911 mt of Longhorn tin: Ryan's Notes, v. 8, no. 127, July, p. 4.
- Ryan's Notes, 2002b, Metal Processing Assn.: Ryan's Notes, v. 8, no. 30, July 29, p. 4.
- Tin International, 2002, The 7th International Tin Conference: Tin International, v. 75, no. 5, p. 5-8.

TABLE 1  
SALIENT TIN STATISTICS 1/

(Metric tons, unless otherwise noted)

	2001 p/	2002		
		May	June	January- June
Production, secondary e/ 2/	10,800	900	900	5,400
<b>Consumption:</b>				
Primary	39,300	3,290	3,090	18,600
Secondary	10,500	797	797	4,840
Imports for consumption, metal	37,500	3,200	NA	NA
Exports, metal	4,350	218	NA	NA
Stocks at end of period	7,700	6,600	6,540	XX
<b>Prices (average cents per pound): 3/</b>				
Metals Week composite 4/	314.88	296.72	304.92	XX
Metals Week New York dealer	211.48	198.78	204.86	XX
London, standard grade, cash	200.00	188.00	194.00	XX
Kuala Lumpur	200.77	187.57	194.28	XX

e/ Estimated. p/ Preliminary. NA Not available. XX Not applicable.

1/ Data are rounded to no more than three significant digits, except prices.

2/ Includes tin recovered from alloys and tinplate. The detinning of tinplate (coated steel) yields only a small part of the total.

3/ Source: Platts Metals Week.

4/ The Metals Week composite price is a calculated formula, not a market price, that includes fixed and finance charges, and a risk factor. It is normally substantially higher than other tin prices.

TABLE 2  
METALS WEEK COMPOSITE PRICE 1/

(Cents per pound)

Period	High	Low	Average
<b>2001:</b>			
June	344.36	325.63	332.74
July	321.14	291.50	306.98
August	285.47	270.73	280.33
September	278.39	262.81	268.50
October	275.81	264.30	270.42
November	301.03	272.87	287.17
December	297.98	283.04	289.64
Year	359.89	262.81	314.88
<b>2002:</b>			
January	287.97	277.20	280.68
February	280.03	267.12	273.15
March	283.34	276.69	278.81
April	291.33	283.90	288.55
May	299.15	290.78	296.72
June	311.49	299.48	304.92

1/ The Metals Week composite price is a calculated formula, not a market price, that includes fixed and finance charges, and a risk factor. It is normally substantially higher than other tin prices.

Source: Platts Metals Week.

TABLE 3  
TINPLATE PRODUCTION AND SHIPMENTS IN THE UNITED STATES 1/

(Metric tons, unless otherwise noted)

Period	Tinplate waste (waste, strips, cobble, etc.) (gross weight)	Tinplate (all forms)			Shipments 2/
		Gross weight	Tin content	Tin per metric ton of plate (kilograms)	
2001p/	77,500	1,710,000	8,130	4.8	2,010,000
2001:					
December	3,880	136,000	668	4.9	130,000
2002:					
January	W	187,000	683	3.6	191,000
February	5,330	191,000	640	3.3	152,000
March	4,440	188,000	588	3.1	163,000
April	5,080	176,000 r/	530	3.0 r/	173,000
May	5,110	197,000	746	3.8	178,000
June	5,850	200,000	609	3.1	NA

p/ Preliminary. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to no more than three significant digits.

2/ Source: American Iron and Steel Institute monthly publication.

TABLE 4  
U.S. TIN IMPORTS FOR CONSUMPTION AND EXPORTS 1/

(Metric tons)

Country or product	2001	2002		
		April	May	January- May
Imports:				
Metal (unwrought tin):				
Bolivia	6,040	442	493	2,900
Brazil	5,510	360	320	1,900
Chile	122	--	--	--
China	6,360	430	701	2,440
Hong Kong	20	--	--	--
Indonesia	3,880	20	20	540
Malaysia	674	--	--	41
Peru	14,000	1,960	1,660	7,820
Russia	143	--	--	1
Singapore	145	--	--	--
United Kingdom	118	--	--	--
Other	434	25	2	96
Total	37,500	3,230	3,200	15,700
Other (gross weight):				
Alloys	3,830	577	370	1,780
Bars and rods	539	21	20	74
Foil, tubes, pipes	1	--	--	(2/)
Plates, sheets, strip	529	--	83	90
Waste and scrap	3,700	52	11	190
Miscellaneous	13,900	944	315	5,670
Total	22,500	1,590	799	7,800
Exports (metal)	4,350	273	218	1,200

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5  
CONSUMPTION OF TIN IN THE UNITED STATES, BY FINISHED PRODUCT 1/

(Metric tons of contained tin)

Product	2001p/	2002						January- June
		May			June			
		Primary	Secondary	Total	Primary	Secondary	Total	
Alloys (miscellaneous) 2/	1,500	133	W	133	160	W	160	832
Babbitt	316	20	22	42	27	22	49	301
Bar tin and anodes	248	43	W	43	13	W	13	115
Bronze and brass	2,640	95	121	216	94	121	215	1,270
Chemicals	8,020	630	W	630	630	W	630	3,800
Collapsible tubes and foil	W	W	W	W	W	W	W	W
Solder	15,700	932	341	1,270	869	341	1,210	7,180
Tinning	906	36	--	36	34	--	34	205
Tinplate 3/	8,130	746	--	746	609	--	609	3,790
Tin powder	W	W	W	W	W	W	W	W
White metal 4/	W	W	W	W	W	W	W	W
Other	1,530	51	13	64	55	13	68	582
Total reported	38,900	2,690	497	3,180	2,490	497	2,990	18,100
Estimated undistributed consumption 5/	10,800	600	300	900	600	300	900	5,400
Grand total	49,700	3,290	797	4,080	3,090	797	3,890	23,500

p/ Preliminary. W Withheld to avoid disclosing company proprietary data; included with "Other." -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includesterne metal.

3/ Includes secondary pig tin and tin components of tinplating chemical solutions.

4/ Includes pewter, britannia metal, and jewelers' metal.

5/ Estimated consumption of plants reporting on an annual basis.