

# Mineral Industry Surveys

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## TIN IN SEPTEMBER 2001

Domestic consumption of primary tin in September was estimated by the U.S. Geological Survey to be slightly less than that in August and 6% lower than that of September 2000.

The Platts Metals Week average composite price for tin in September was \$2.80 per pound, 4% higher than that in August and 25% lower than that in September 2000.

In Peru, Minsur, the country's only tin miner, announced plans to refine 100% of its tin output by next year. Minsur expected to cease exporting 20% of its tin mine output as a concentrate from 2002 onward. All of the company's 35,000-metric-ton-per-year (t/yr) production would be refined at its 45,000-t/yr Funsur tin refinery in the southern part of Pisco. The San Rafael underground tin mine, located in the southern highland region of Puno (with a 2,500-metric-ton-per-day production capacity), produced about 37,000 t/yr of tin in concentrate last year, up 22% over 1999. Minsur is considering a \$20 million upgrade to expand the Funsur tin refinery by one-third to 60,000 t/yr in 2002. Minsur aims to invest \$10 million in 2001 for mine upgrades and exploration work in concessions throughout the country in a bid to boost tin reserves and diversify into gold and polymetallic projects in the regions of Puno and Arequipa (the southern highlands), Cajamarca and Ancash (northern Andes), and the highlands above Lima. The San Rafael mine has reserves of 14 million metric tons (Mt) with ore grades of 5% tin, making it one of the world's richest tin deposits. The mine has an estimated life of 15 years. Minsur, controlled by the local Brescia Group, makes Peru the world's third-ranked tin producer after China and Indonesia and operates at a production cost of \$1,200 per metric ton (Platts Metals Week, 2001c).

In China, Government officials announced that the country's tin output is expected to be lower in 2001 due to a tin concentrate shortage stemming from the reduced number of mines in Guangxi. A Nandan tin mine in Guangxi flooded in July, killing 80 people and resulted in the closure of several other area tin mines. Officials expected that China's tin output could fall to a range of 60,000 to 80,000 metric tons (t)

compared to 110,000 t in 2000 (Platts Metals Week, 2001b).

In Indonesia, it was reported that tinplate producer PT Latinusa is considering plans to install an electrochrome coating line at its works in Cilegon, West Java, with a capacity of 130,000 t annually. If completed, this line would produce tin-free-steel (TFS) and would replace an earlier project, announced in the late 1990s, to construct a second tinplate line. That prior plan would have lifted overall tinplate capacity to 260,000 t/yr, but was abandoned in anticipation of faltering demand for tinplate in Indonesia. Tinplate production in 2001 is expected to remain at the 2000 level of 100,000 t. Presently, all output is consumed domestically. Latinusa is 96% owned by Indonesia's Government-owned steel plant, PT Krakatau Steel, and several private firms account for the remaining 4% (Metal Bulletin, 2001a).

Also in Indonesia, the country's dominant tin miner, PT Tambang Timah, has drawn up a series of emergency measures to protect its mining and smelting operations. This approval has become necessary as Timah faces possible new taxes and regulations on its main mining/smelter base, Bangka Island. The company may halt all mining activity on Bangka Island and transfer its smelting activities to nearby Kundur Island. As well as reducing its workforce, Timah may consider a tolling arrangement with either Malaysia Smelting Corp. or Thaisarco to treat tin concentrates during the smelter relocation period. Timah officials believe that such measures would only be needed in an extreme situation. More immediately, Timah is evaluating the profitability of its offshore dredges and inland mines. Two dredges were recently taken out of service, and the number of operational mines in the firm's lease area has fallen to 123 from over 240 last year.

PT Timah is especially concerned about the increased legal powers enjoyed by the local Bangka Government as Indonesia moves toward a less centralized system of government. As well as granting export permits to small-scale miners that Timah claims are operating illegally on its lease area, the Bangka authorities are also proposing new tax regulation. This

so-called regional regulation no. 21, would allow Bangka authorities to claim a 20% tax on the sales value of tin mined on the island. This compares with a 3% royalty currently paid by Timah to the central government (Metal Bulletin, 2001b).

In England, the South Crofty tin mine in Cornwall re-opened on September 24, after its closure over 3 years ago. The re-start of operations at the mine will include dewatering the underground workings, which are currently flooded to within 200 meters of the surface. Pumping was expected by yearend. The mill at the former Crofty milling operation at the now-defunct, nearby Wheal Jane tin mine, in Truro, is to be relocated to South Crofty (Mining Journal, 2001).

Crown Cork & Seal Corp. (Philadelphia, PA) is the world's largest producer of tinplated steel cans, consuming nearly 2 Mt of tinplate annually. About three-quarters of its production is in Europe, where the firm uses about 900,000 t annually of tinplate to make food cans, and where the tin beverage can continues to hold an impressive market share against aluminum (Container Recycling Report, 2001).

In Kazakhstan, the Narodny Bank of Kazakhstan has announced plans to finance a new mining project to produce tin and rare metals. The proposed new mine is at Sarymbet in central Kazakhstan. The Sarymbet Mining Company will have its concentrate toll smelted by the Novosibirsk Tin Combine. Production was expected to be 2,500 t of tin-in-concentrate the first year, rising later to 5,500 t/yr (Tin International, 2001a).

Recent decades have been a time of great change for Malaysia as the nation's ambition to join the ranks of Asia's "tiger" economies has produced impressive results. Formerly a producer of primary commodities, Malaysia has transformed its economy and developed a modern industrial base that includes electronics, petrochemicals, steel, and automotive production. Industrial progress and economic development have had a major impact on Malaysia's tin mining industry. At the end of the 1970s, Malaysia was the world's largest tin producer with annual production exceeding 70,000 t. Current production is only about 10% of former peak levels due to less virgin land being allocated to tin mining. According to statistics published by the Government's Department of Minerals and Geoscience, production of tin concentrates totalled 6,300 t in 2000. In 2000, the number of operating tin mines was 40, employing 1,700 workers. Gravel pump tin mines are the largest producers of tin concentrates with the 25 operating gravel pump mines in 2000 producing about 3,400 t, or 54% of Malaysia's total concentrate output. The country's 12 open cast tin mines are the second major source of

concentrates, producing 1,300 t in 2000. Previously threatened with relegation to the status of a sunset industry, signs recently have begun to emerge that tin mining could receive more government support in the future. As a fast developing country, demand for land for industrial use is great. Malaysia is not large, and there are strong pressures to achieve economic development by 2020. Before independence, tin and rubber were the twin pillars of the economy. But now, manufacturing accounts for 40% of GDP, while mining-oil-gas is less than 10%. If oil and gas are deducted, minerals account for less than 5% of GDP (Tin International, 2001b).

### Update

Bethlehem Steel Corp. (Bethlehem, PA), a major steel producer and tinplate maker, filed for Chapter 11 protection on October 15 in the U.S. Bankruptcy Court for the Southern District of New York. Bethlehem follows several large domestic steel producers into bankruptcy, including LTV Corp., which sought protection in December 2000. Twenty-three domestic steel producers have filed for bankruptcy protection or shut down since 1998, according to the American Iron and Steel Institute. Bethlehem, currently rated as the third largest overall domestic steel producer, and second largest integrated steel producer, currently employs 11,300 people at several plants. All of its tin mill facilities are at its Sparrows Point, MD, plant (Platts Metals Week, 2001).

On November 9, 2001, the Platts Metals Week composite price for tin was \$2.82 per pound.

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TABLE 1  
SALIENT TIN STATISTICS 1/

(Metric tons, unless otherwise noted)

	2000 p/	2001		
		August	September	January- September
Production, secondary e/ 2/	10,800	900	900	8,100
Consumption:				
Primary	42,000	3,280	3,300	29,500
Secondary	10,700	883	853	7,800
Imports for consumption, metal	44,900	2,910	NA	NA
Exports, metal	6,640	292	NA	NA
Stocks at end of period	10,400	8,920 r/	8,910	XX
Prices (average cents per pound): 3/				
Metals Week composite 4/	370.16	268.50	280.33	XX
Metals Week New York dealer	254.92	185.28	175.75	XX
London, standard grade, cash	246.00	177.00	167.00	XX
Kuala Lumpur	244.12	173.21	164.16	XX

e/ Estimated. p/ Preliminary. r/ Revised. 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
2000:			
September	375.60	365.86	372.11
October	368.35	355.28	362.14
November	364.20	355.77	361.05
December	361.83	355.46	359.43
Year	405.27	355.46	370.16
2001:			
January	359.90	350.60	355.86
February	355.03	349.76	352.96
March	352.74	341.70	348.45
April	346.75	340.32	342.70
May	348.21	336.94	342.78
June	359.89	325.63	332.74
July	359.89	291.50	306.98
August	291.44	270.73	268.50
September	359.89	262.81	280.33

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)	
2000 p/	W	1,720,000	8,990	5.2	2,290,000
2000:					
December	W	107,000	646	6.0	162,000
2001:					
January	W	W	710	7.3	179,000
February	W	92,800	679	7.3	160,000
March	W	102,000	663	6.5	167,000
April	W	90,700	698	7.7	162,000
May	W	88,900	679	7.6	181,000
June	W	80,600	666	8.3	175,000
July	W	80,300	514	6.4	167,000
August	W	W	511	6.2	185,000
September	W	W	531	6.1	NA

p/ Preliminary. 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	2000	2001		January- August
		July	August	
Imports:				
Metal (unwrought tin):				
Bolivia	6,330	891	235	4,530
Brazil	5,860	360	540	3,440
Chile	2,630	--	--	122
China	10,200	339	320	5,600
Hong Kong	397	--	--	20
Indonesia	5,320	299	480	2,960
Malaysia	214	--	--	222
Peru	12,800	1,710	1,320	10,000
Russia	145	--	--	141
Singapore	20	--	--	105
United Kingdom	514	12	(2/)	118
Other	434	24	21	334
Total	44,900	3,630	2,910	27,600
Other (gross weight):				
Alloys	4,370	130	637	2,520
Bars and rods	993	20	24	370
Foil, tubes, pipes	(2/)	(2/)	1	1
Plates, sheets, strip	588	6	19	54
Waste and scrap	2,340	61	139	3,520
Miscellaneous	8,510	1,000	420	9,210
Total	16,800	1,220	1,240	15,700
Exports (metal)	6,640	245	292	3,210

-- 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	2000 p/	2001						
		August			September			January- September
		Primary	Secondary	Total	Primary	Secondary	Total	
Alloys (miscellaneous) 2/	1,430	126	W	126	128	W	128	1,130
Babbitt	249	25	W	25	24	W	24	266
Bar tin and anodes	294	20	W	20	20	W	20	186
Bronze and brass	2,800	114	138	252	104	113	217	2,000
Chemicals	8,180	668	W	668	668	W	668	6,020
Collapsible tubes and foil	W	W	W	W	W	W	W	W
Solder	16,900	1,050	410	1,460	1,070	393	1,460	12,300
Tinning	666	74	--	74	76	--	76	688
Tinplate 3/	9,020	511	--	511	531	--	531	5,650
Tin powder	195	W	W	W	W	W	W	W
White metal 4/	10	W	W	W	W	W	W	W
Other	2,240	83	35	118	85	47	132	995
Total reported	41,900	2,680	583	3,260	2,700	553	3,260	29,200
Estimated undistributed consumption 5/	10,800	600	300	900	600	300	900	8,100
Grand total	52,700	3,280	883	4,160	3,300	853	4,160	37,300

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/ Includes terne 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.