

Mineral Industry Surveys

For information, contact:

James F. Carlin, Jr., Tin Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4985, Fax: (703) 648-7757
E-mail: jcarlin@usgs.gov

Elsie D. Isaac (Data)
Telephone: (703) 648-7950
Fax: (703) 648-7975
E-mail: eisaac@usgs.gov
MINES FaxBack: (703) 648-4999
Internet: <http://minerals.usgs.gov/minerals>

TIN IN MAY 2000

Domestic consumption of primary tin in May was estimated by the U.S. Geological Survey to be about 2% higher than that in April and 4% lower than that in May 1999.

The *Platt's Metals Week* average composite price for tin in May was \$3.68 per pound, about equal to that in April and 1% lower than that in May 1999. The average tin price has declined in each of the five months of 2000.

In Kosice, Slovakia, shareholders in the Slovak steel group, VSZ a.s., approved a plan which would allow U.S. Steel Group to acquire the company's core assets, including its tinplate operations. The deal would add about 3.4 million metric tons of crude steel production to U.S. Steel's existing 11 million tons. About 84% of VSZ's stockholders gave their support to the proposal as stated in a memorandum of understanding signed in March. Officials indicated that U.S. Steel had committed \$700 million in capital spending for the first phase of a VSZ modernization program. Initially, the company will complete the upgrade of its current 50-50 tinplate joint venture with VSZ by installing a 200,000-ton-per-year continuous annealing line. A \$26 million temper line will also be installed, followed by a new 200,000-ton-per-year tinning line. Upon completion of the acquisition, U.S. Steel would target sales primarily within Central and Eastern European markets. U.S. Steel officials believe that the market within 600 km of Kosice is sufficient to absorb expected mill capacity (*Metal Bulletin*, 2000a).

Phelps Dodge Corp. (USA) announced that it agreed to join the Australian company, Platsearch Ltd., in its Tara copper-zinc-tin exploration project in New South Wales. Under the terms of the agreement, Phelps Dodge can earn a 60% stake in Tara by spending \$1.2 million on a ground magnetic survey and a 400-meter drill hole. Once Phelps Dodge has earned its 60%, Platsearch and its existing partner, Nosebi Mining and Management, will participate at 32% and 8%, respectively. Previous drilling at Tara intersected narrow widths of copper-zinc-tin mineralization. Phelps Dodge planned to begin drilling this summer (*Platt's Metals Week*, 2000c).

The U.S. Department of Commerce issued a final determination that assessed antidumping duties of over 95% against four

Japanese tinplate producers (Nippon Steel Corp., Kawasaki Steel Corp., NKK Steel Corp., and Toyo Kohan Co.) based on an investigation covering the period October 1, 1998, through September 30, 1999. The case now is before the U.S. International Trade Commission, which must rule by July 29 on whether U.S. industry was injured or threatened with injury by the Japanese imports (*Platt's Metals Week*, 2000b).

In Yorkshire, England, Rio Tinto Ltd. announced that it expects to disprove in court allegations that its former Capper Pass Tin Smelter caused injuries or illnesses among workers and local residents. Rio Tinto's subsidiary, Capper Pass and Son Ltd. (Hull, England), was the world's largest tin smelter at the time of its closure in 1991. Rio has repeatedly rejected allegations that emissions from the smelter were responsible for medical problems among local residents and former employees, or that the emissions damaged the surrounding environment. No date has yet been set for a court hearing in the case (*Metal Bulletin*, 2000b).

In Bolivia, Allied Deals Corp. announced that its Huanuni Tin Mine has discontinued the practice of blending high and low grade ores. The mine now produces two products, a high-grade ore grading 50-55% tin that is crushed and shipped directly to the Vinto smelter; and a lower grade ore running about 2.5% tin that is concentrated by the mill (with a recovery rate around 60%) and then sent to the Vinto smelter. Allied Deals took control of Vinto and Huanuni in March 2000 (*Platt's Metals Week*, 2000a).

In China, the major tin producer, Yunnan Tin Corp., announced that it expected a delay in the completion of its new furnace, citing technical difficulties. Officials now project a late 2001 start-up. Yunnan is upgrading its 24,000-ton-per-year (t/yr) tin smelter in Gejiu City by replacing its current seven reverberatory furnaces with a new furnace. The new furnace will continue to process 50,000 t/yr of concentrate and produce 24,000 t/yr of refined ingot. Yunnan has invested \$12 million in the upgrade. In 2000, Yunnan will continue to target a maximum output of 24,000 tons of refined tin, which is in line with 1999 production (*Platt's Metals Week*, 2000d).

In Indonesia, the world's largest integrated tin producer, the

Government-controlled PT Timah, announced plans to reduce its output of refined tin in 2000 by 5,000 tons to a level of 35,000 tons. The company indicated that the reduction is intended to conserve reserves. Timah's inland mining activities also were disrupted by heavy rains in the first quarter, causing the company to significantly reduce excavation during the period (CRU Tin Monitor, 2000c).

In Peru, the country's major tin miner, Minsur, announced plans to invest \$7 million this year in exploration work. During 1999, Minsur completed an expansion at its mine, increasing the production rate from 1,500 tons per day of tin ore to 2,500 tons per day. As a result, the company expects to produce about 35,000 tons of tin-in-concentrate this year (Tin International, 2000b).

In Germany, the country's only tinplate producer, Rasselstein Hoesch GmbH (RHG), owned by Thyssen Krupp, announced plans to shutter one of its plants in an attempt to bolster profitability. The plant to be closed is RHG's Dortmund facility, with a tinplate capacity of 180,000 tons annually. Its closure is set for three stages, with operations to cease completely by the end of 2001. RHG has its main plant in Andernach, with tinplate capacity of 900,000 tons annually. Its capacity is to be expanded to 1 million tons annually by the end of 2001 (Tin International, 2000d).

In Uxbridge, England, ITRI, the world's foremost laboratory devoted to tin research and market development, announced updated details on two of its main areas of focus designed to foster more tin use:

- a) Fire retardants—tin-based fire retardants, zinc hydrostannate (ZHS) and zinc stannate (ZS) were marketed in 1990 as gradual replacements for antimony trioxide and certain other traditional flame retardants. Currently, consumption of ZHS and ZS in Europe is reportedly growing at 11% per annum accounting for 700 tons of tin consumption per year. ITRI is now aiming to repeat that success in Japan and North America. Potentially, fire retardants could use 5,400 tons of

tin annually assuming a combined 15% market share for ZHS and ZS.

- b) Automotive market—currently, tin is consumed mostly in electronic solders, heat exchange solders, and batteries, which together account for about 7,000 tons annually of tin consumption. Further consumption growth in these areas is possible as the amount of solder usage in cars expands. However, potentially, the most promising area for expanded tin use is the market for wheel weights. These are now produced as a lead-antimony alloy, but the move toward lead-free automobiles may provide the opportunity for tin to gain a market share in this field (Tin International, 2000a).

Update

On June 23, 2000, the *Platt's Metals Week* composite price for tin was \$3.73 per pound.

References Cited

- CRU Tin Monitor, 2000a, ITRI promoting tin consumption: CRU International Ltd., June, p. 8.
- 2000b, Minsur to invest in exploration work: CRU International Ltd., June, p. 8.
- 2000c, PT Timah to cut production: CRU International Ltd., June, p. 8.
- 2000d, Rasselstein to close down Dortmund: CRU International Ltd., June, p. 8.
- Metal Bulletin, 2000a, Rio Tinto offer accepted in Capper Pass dispute: Metal Bulletin, no. 8482, June 8, p. 4.
- 2000b, VSZ shareholders vote to bring in US Steel: Metal Bulletin, no. 8479, May 29, p. 7.
- Platt's Metal Week, 2000a, Huanuni mine no longer blending ores: Platt's Metals Week, v. 71, no. 25, June 19, p. 19.
- 2000b, Nippon dispute US dumping ruling, plans ITC defense: Platt's Metals Week, v. 71, no. 26, June 26, p. 16.
- 2000c, PD farms into Australian exploration: Platt's Metals Week, v. 71, no. 24, June 12, p. 15.

TABLE 1
SALIENT TIN STATISTICS 1/

(Metric tons, unless otherwise noted)

	2000			
	1999 p/	April	May	January- May
Production, secondary e/ 2/	10,800	900	900	4,500
Consumption:				
Primary	42,800	3,490	3,550	17,600
Secondary	12,300	887	903	4,480
Imports for consumption, metal	47,500	3,660	NA	NA
Exports, metal	6,770	488	NA	NA
Stocks at end of period	XX	7,810 r/	7,930	XX
Prices (average cents per pound): 3/				
Metals Week composite 4/	365.98	368.16	367.72	XX
Metals Week New York dealer	254.54	253.38	254.94	XX
London, standard grade, cash	245.00	244.00	247.00	XX
Kuala Lumpur	240.70	243.21	240.74	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/ From Platt's 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
1999:			
May	384.76	373.61	380.66
June	368.44	354.81	360.01
July	362.56	356.00	357.87
August	362.04	355.27	358.10
September	372.30	357.68	364.61
October	383.67	363.53	369.61
November	397.54	385.56	391.55
December	403.52	381.53	386.61
Year	403.52	343.72	365.98
2000:			
January	405.27	390.75	397.72
February	391.72	377.25	382.84
March	383.26	364.68	373.01
April	371.49	365.85	368.16
May	369.58	363.91	367.72

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: Platt's 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)	
1999 p/	W	1,750,000	9,080	5.2	2,370,000
2000:					
January	W	141,000	718	5.1	184,000
February	W	144,000	785	5.5	175,000
March	W	155,000	810	5.2	203,000
April	W	149,000	736	4.9	170,000
May	W	156,000	816	5.2	219,000

p/ Preliminary. 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	1999 p/	2000		
		March	April	January- April
Imports:				
Metal (unwrought tin):				
Bolivia	3,850	683	582	2,370
Brazil	4,700	280	582	1,640
Chile	3,980	236	260	1,480
China	13,900	1,070	899	4,410
Hong Kong	261	20	21	257
Indonesia	7,930	446	340	1,730
Japan	282	--	--	--
Malaysia	944	--	4	24
Peru	11,000	920	970	4,080
Singapore	60	--	--	20
Thailand	20	--	--	--
United Kingdom	60	100	--	208
Other	533	22	2	73
Total	47,500	3,770	3,660	16,300
Other (gross weight):				
Alloys	3,090	452	277	1,380
Bars and rods	872	83	60	298
Foil, tubes, pipes	1	--	--	--
Plates, sheets, strip	122	2	118	120
Waste and scrap	2,730	181	87	517
Miscellaneous	2,290	177	341	971
Total	9,100	895	883	3,290
Exports (metal)	6,770	532	488	2,060

p/ Preliminary. -- Zero.

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

Source: Bureau of the Census.

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

(Metric tons of contained tin)

Product	2000							
	1999 p/	April			May			January- May total
		Primary	Secondary	Total	Primary	Secondary	Total	
Alloys (miscellaneous) 2/	W	122 r/	--	122 r/	123	--	123	617
Babbitt	22	37	W	37	36	W	36	177
Bar tin and anodes	244	26	W	26	26	W	26	127
Bronze and brass	3,170	99	127	226	96	127	223	1,240
Chemicals	8,140	682	W	682	682	W	682	3,380
Collapsible tubes and foil	W	W	W	W	W	W	W	W
Solder	14,000	1,050	423	1,470	1,030	423	1,450	7,320
Tinning	508	53	--	53	55	--	55	304
Tinplate 3/	9,080	736	--	736	816	--	816	3,870
Tin powder	W	W	--	W	W	--	W	97
White metal 4/	W	W	--	W	W	--	W	10
Other	6,120	85	37	122	87	53	140	448
Total reported	41,300	2,890	587	3,480	2,950	603	3,550	17,600
Estimated undistributed consumption 5/	13,800	600	300	900	600	300	900	4,500
Grand total	55,100	3,490	887	4,380	3,550	903	4,450	22,100

p/ Preliminary. r/ Revised. 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 terre 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.