

Mineral Industry Surveys

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TIN IN MAY 2005

Domestic consumption of primary tin in May was estimated by the U.S. Geological Survey to be about 2% less than that in April and about 4% less than that in May 2004. The Platts Metals Week average composite price for tin in May was \$5.25 per pound, slightly less than that in April and 11% less than that in May 2004. For the first 4 months of 2005, Peru remained the dominant supplier of refined tin to the United States, followed by Bolivia, Brazil, and China.

World consumption of tin exceeded output in both 2003 and 2004, and London Metal Exchange (LME) stocks declined by 47% over those 2 years to reach multi-year lows. According to recently published analysis (Amlôt, 2005), despite the sharp increase in tin prices in 2003 and 2004, the tin market was expected to be in deficit until at least 2006 as a result of demand growth and stagnant supply. There has been little investment in tin mines during the past couple of decades, and small mines now account for around one-half of the world's tin production. Furthermore, the National Defense Stockpile could be exhausted within 3 years. Projects in Argentina, Australia, Brazil, Egypt, Russia, and the United Kingdom, however, could add as much as 25,000 metric tons per year (t/yr) to the mined supply of tin over the next 5 years.

According to the analysis, world tin consumption exceeded 300,000 metric tons (t) for the first time in 2003, and was estimated to have been about 330,000 t in 2004, with Asia consuming around one-half of this total. Asia (notably China) has accounted for most of the estimated 17% increase in global tin consumption over the past 4 years. Demand is expected to continue to increase in all end-use sectors over the next 5 years, but the fastest growth rates will be in solder and chemicals, resulting in a world market of 365,000 t/yr in 2008. Demand for tin has been boosted by the move to lead-free solders, prodded by legislation in China, the European Union, and Japan. Solders that typically containing more than 63% tin are being replaced with solders containing more than 95% tin, creating a 35% increase in tin demand for solder. The conversion is expected to be almost total in Japan and Europe by the end of 2006. Tin demand has been relatively unaffected by higher prices so far—tin accounts for a very small fraction of total production costs in many of its end-uses. For example, a typical mobile telephone

contains about 1 gram of tin, worth less than 1 cent. The fundamentals of the tin market point to continued strength well into 2006. The top five tin metal producers, responsible for around 55% of primary tin metal output, are Minsur SA (Peru), Malaysia Smelting Corp. (Malaysia), PT Tambang Timah Persero (Indonesia), and Yunnan Tin Corp. (China). Only Minsur is fully integrated, with the others being reliant, to some extent, on small-scale producers to provide tin concentrate feedstock for their smelter (Amlôt, 2005).

The Indonesian Government announced plans for a joint venture between Indonesia's PT Koba Tin, state-owned PT Timah, and the local government of Bangka Belitung Province that would build a new tin smelter in Bangka Belitung. Indonesia's tin smelters have a capacity of only 98,000 t/yr, but the country's tin mine production is 110,000 t/yr. As a result, some of Indonesia's tin is smelted in other countries (Platts Metals Week, 2005).

In Peru, Minsur announced a small increase in capacity at its Funsur tin smelter and refinery near Pisco. Minsur is aiming to step up production to some 42,000 t in 2005. Minsur is in the process of switching to natural gas from oil to generate power for the smelter, and may import about 3,000 t of tin concentrates to supplement supplies from its own San Rafael Mine. Minsur became the world's number one tin producer in 2004. Until now, its refined tin production had been constrained by the capacity of its own mine, which produced 41,400 t of tin-in-concentrate in 2004 (CRU Week in the News, 2005§¹).

A report by the nongovernmental monitoring organization Global Witness estimated that output of tin-in-concentrate in the Democratic Republic of Congo (DRC) rose from 2,900 t in 2003 to 8,300 t in 2004, with a significant proportion of production exported illegally via neighboring Rwanda. Rwanda's concentrate exports were believed to be more than five times local mine production, estimated at 300 t/yr. The report indicates that DRC tin concentrate was either flown to Kigali in Rwanda for transport to Mombassa or Dar se Salaam, or processed at the Metal Processing Association (MPA) smelter

¹A reference that includes a section mark (§) is found in the Internet Reference Cited section.

just inside the Rwandan border at Gisenyi. The smelter currently produces about 200 t/yr of refined tin, all of which goes to the tinplate industry in South Africa, although the company is planning to expand its capacity to 5,000 t/yr (CRU Week in the News, 2005\$).

The Indonesian small tin mines on Bangka and Belitung Islands, known locally as “tambang inconventional,” were estimated to be producing about 84,000 t/yr of tin-in-concentrate, or more than one quarter of global production. About one half of this material was delivered to PT Timah and PT Koba Tin, and the balance to the small independent tin smelters, which have started up since late 2003. Any changes in these volumes are likely to have a major influence on the world supply/demand position. There are currently almost 6,000 small tin mines operating on the two major companies’ leases (about 4,500 on PT Timah land and 1,400 on PT Koba Tin property). These mines typically employ five to six workers and produce about 1 metric ton of tin each month in the form of low-grade (20% tin) concentrate using simple hydraulic separation. There also has been a substantial rise in activity elsewhere in Bangka (the Timah and Koba Tin leases cover only 20% to 25% of the land area), particularly on the beaches and in shallow water

offshore on the north coast of the island. Mining is also done in rivers. These small producers sell their output to collectors/traders, who often upgrade the concentrates to 70% tin content. There are now 19 independent tin smelters reported to be operating in Bangka and 2 in Belitung (CRU Tin Monitor, 2005).

Update

On July 1, 2005, the Platts Metals Week composite price for tin was \$4.79 per pound.

References Cited

- Amlôt, Robin, 2005, Wild ride for Tin: Mining Journal, May 6, p. 14-17.
CRU Tin Monitor, 2005, Focus on Indonesia: CRU International Ltd., June, p. 6-7.
Platts Metals Week, 2005, New Indonesian smelter planned: Platts Metals Week, v. 76, no. 23, June 6, p. 14.

Internet Reference Cited

- CRU Week in the News, 2005 (July 7), Tin, accessed July 7, 2005, via URL <http://www.crumonitor.com>.

TABLE 1
SALIENT TIN STATISTICS¹

(Metric tons, unless otherwise noted)

	2005			
	2004 ^P	April	May	January- May
Production, secondary ^{6, 2}	10,800	900	900	4,500
Consumption:				
Primary	38,500	3,110	3,060	15,800
Secondary	8,200	764	765	3,830
Imports for consumption, metal	47,600	3,650	NA	NA
Exports, metal	3,650	457	NA	NA
Stocks at end of period	6,140	5,770	5,400	XX
Prices (average cents per pound): ³				
Metals Week composite ⁴	547.30	527.02	524.53	XX
Metals Week New York dealer	409.38	394.87	392.50	XX
London, standard grade, cash	385.00	369.00	368.00	XX
Kuala Lumpur	385.11	367.96	365.32	XX

⁶Estimated. ^PPreliminary. NA Not available. XX Not applicable.

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

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

³Source: Platts Metals Week.

⁴The 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 PRICE¹

(Cents per pound)

Period	High	Low	Average
2004:			
May	624.98	575.07	592.12
June	622.44	568.24	589.38
July	583.13	565.64	576.07
August	590.50	563.04	573.74
September	585.04	566.00	576.55
October	586.56	568.98	578.10
November	584.93	570.24	580.02
December	569.06	505.64	555.57
Year	624.98	424.94	547.30
2005:			
January	521.70	492.15	503.78
February	544.11	511.92	523.08
March	555.16	521.08	543.81
April	534.61	521.86	527.02
May	529.88	521.36	524.53

¹The 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 STATES¹

(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)	
2004 ^P	W	2,550,000	7,700	3.0	2,190,000
December	W	196,000	588	3.0	198,000
2005:					
January	W	207,000	676	3.3	144,000
February	W	202,000	684	3.4	164,000
March	W	209,000	684	3.3	166,000
April	W	199,000	662	3.3	136,000
May	W	174,000	595	3.4	NA

^PPreliminary. NA Not available. W Withheld to avoid disclosing company proprietary data.

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

²Source: American Iron and Steel Institute monthly publication.

TABLE 4
U.S. TIN IMPORTS FOR CONSUMPTION AND EXPORTS¹

(Metric tons)

Country or product	2004 ^P	2005		
		March	April	January- April
Imports:				
Metal (unwrought tin):				
Bolivia	5,060	643	444	1,970
Brazil	4,330	25	350	852
Chile	281	--	20	20
China	5,310	448	315	1,670
Indonesia	4,660	296	181	638
Japan	540	--	--	--
Malaysia	6,600	30	50	707
Peru	19,600	1,720	2,290	6,860
Switzerland	178	--	--	--
Thailand	500	--	--	35
United Kingdom	97	--	--	18
Other	472	55	6	129
Total	47,600	3,210	3,650	12,900
Other (gross weight):				
Alloys	5,180	1,010	1,100	2,810
Bars and rods	625	87	83	286
Foil, tubes, pipes	6	(2)	--	(2)
Plates, sheets, strip	509	38	80	158
Waste and scrap	1,950	241	450	1,000
Miscellaneous	3,330	234	236	1,030
Total	11,600	1,610	1,950	5,280
Exports (metal)	3,650	282	457	1,160

-- Zero.

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

²Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5
CONSUMPTION OF TIN IN THE UNITED STATES, BY FINISHED PRODUCT¹

(Metric tons of contained tin)

Product	2005							
	2004 ^P	April			May			January- May
		Primary	Secondary	Total	Primary	Secondary	Total	
Alloys (miscellaneous) ²	2,800	107	W	107	106	--	106	527
Babbitt	264	21	W	21	18	W	18	147
Bar tin and anodes	182	23	W	23	20	W	20	12
Bronze and brass	2,490	166	130	296	171	131	302	1,520
Chemicals	8,490	719	W	719	719	W	719	3,590
Collapsible tubes and foil	W	W	W	W	W	W	W	W
Solder	12,500	676	325	1,000	679	325	1,000	5,210
Tinning	451	60	--	60	62	--	62	306
Tinplate ³	7,700	662	--	662	595	--	595	3,300
Tin powder	W	W	--	W	W	--	W	W
White metal ⁴	W	W	--	W	W	--	W	W
Other	1,000	80	9	89	85	9	94	551
Total reported	35,900	2,510	464	2,980	2,460	465	2,920	15,200
Estimated undistributed consumption ⁵	10,800	600	300	900	600	300	900	4,500
Grand total	46,700	3,110	764	3,880	3,060	765	3,820	19,700

^PPreliminary. W Withheld to avoid disclosing company proprietary data; included with "Other." -- Zero.

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

²Includesterne metal.

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

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

⁵Estimated consumption of plants reporting on an annual basis.