

Mineral Industry Surveys

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ZINC IN SEPTEMBER 2002

Domestic mine production in September, at 57,300 metric tons (t), was about 18% less than in August and about 10% less than in September 2001. Smelter production, estimated at 16,200 t, was the same as in August but was about 35% less than a year before. Apparent consumption, at 91,200 t was about 8% lower than in August and about 6% lower than in September 2001.

The Platts Metals Week average monthly composite price for North American Special High Grade zinc increased by about 1%, to 37.81 cents per pound in September. Compared with September 2001, the zinc price was about 5% less, or about 2.2 cents lower.

London-based Bloomsbury Mineral Economics Ltd. (BME) developed a new pricing model for primary nonferrous metals. BME argues that changes in base-metal prices have three types of price-drivers: primary, secondary, and tertiary. The primary price-drivers are changes in the demand and supply curves. Of these, the demand curve is usually more volatile and changes rapidly with the cycle of global industrial production. It is also usually the initiator of the metal price cycle, whereas supply responds to changes in price. Prices and supply both oscillate around equilibrium levels, initiating a cycle of stock changes. These stock changes are the secondary drivers of price. The relative strength or weakness of the U.S. dollar to other currencies is the tertiary price-driver (Mining Journal, 2002).

Operations at Big River Zinc Corp. (subsidiary of Korea Zinc Co. Ltd.), Sauget, IL, began on September 15 when the company resumed heating one of two rebuilt roasters. The plant was idled in June for a planned three-month upgrade. All the employees have returned to work although some may ultimately be laid off if some labor-saving initiatives are proven to be effective (CRU International Ltd., 2002).

Teck Cominco Ltd. announced that ore production at the Red Dog Mine, AK, during the first nine months in 2002 was lower than during the same period in 2001. Because of slightly higher ore grades and improved zinc recovery, concentrate production increased by more than 8% to 421,000 t during the first three quarters of this year. Despite higher sales, compared with 2001,

the company incurred a loss of \$17 million, owing to lower zinc prices. The underground Polaris zinc mine, located on Little Cornwallis Island, Northwest Territories, Canada, closed on September 4 after exhausting its ore, following 20 years of mining. Removal of the plant and reclamation work at the site has commenced. The 75,000 t of concentrate still stored at the site is to be sold by May of next year. Lost production from the Polaris Mine will be replaced by production from the Pend Oreille Mine, WA, where shaft sinking and hoist installation is expected to be completed by yearend 2002. Underground development is proceeding according to schedule and construction of the processing facilities is expected to start early next year and be completed early in 2004 (Teck Cominco Ltd., 2002).

Votorantim Industries SA of Brazil is to invest \$34 million in upgrading its zinc mining operations in order to reduce its dependence on imported concentrates by yearend 2003. Most of the 230,000 t of zinc concentrate that Brazil imports comes tariff-free from Chile and Peru. The drawbacks of dependence on such large imports were exposed on June 30, when the tariff-free agreement between Brazil and Peru was not automatically renewed. A 2% import tax and a 25% maritime fleet surcharge were added to the price of zinc concentrates from Peru, increasing freight charges by \$15 per ton. At least 30,000 t of zinc concentrates were held at the port until the accord was extended. Votorantim owns the 160,000-tons-per-year (t/yr) Cia Mineira de Metais smelter and the recently acquired 94,000-t/yr Paraibuna de Metais smelter. About one-half of their feed is imported. The aim of the new investment is to reduce the share of imported concentrates to 30%. This is to be accomplished by opening a new zinc mine in Mato Grosso do Sul, expanding the Morro Agudo Mine, and directing 20% of investment toward prospecting in the state of Minas Gerais. Votorantim is expected to produce 250,000 t of zinc metal during 2002, up from 201,000 t in 2001. About 20% of output will be exported (Metal Bulletin, 2002c).

At the end of September, several Japanese zinc producers announced reduced production targets for the second half of

their fiscal year (October 2002 through March 2003). The only company defying the trend is Mitsui Mining & Smelting Co. Ltd., which is to increase output to 97,100 t, up 2.1% from the same period a year earlier. Mitsui attributed the rise to falling production costs due to the integration of its operations with Sumitomo Metal Mining Co. Ltd. in January 2002. Sumitomo expects to lower its output by 7.7% to 56,700 t. The main portion of the decrease will come from its Harima smelter, where output will decline by 10.8% to 42,300 t. Nippon Mining & Metals is to produce 45,500 t in the second half of the fiscal year, down 6.8% from a year before. Part of Nippon's zinc output comes from the 110,000-t/yr Hachinohe smelter, in which it holds a 27.8% stake; the majority 57.7% share is held by Mitsui. Mitsubishi Materials Corp. has lowered its planned zinc output by 41.5% to 5,440 t. This large drop was caused by the termination of its agreement with Toho Zinc Co. Ltd. in which Mitsubishi was entitled to 7.9% of Hachinohe's output (Platts Metals Week, 2002a).

Low prices and the continuing slump in domestic demand for zinc have led Dowa Mining Co. Ltd. and Mitsubishi Materials of Japan to explore possible consolidation of some downstream operations, such as production and marketing of zinc alloys for diecasting. Under consideration is a deal that would make better use of Mitsubishi's zinc alloy plant after the company closed its zinc smelter/refinery in 1996. Since closure, the alloy plant has been relying on supplies of zinc metal from the Akita smelter in which Dowa Mining owns 57% equity. For its 5% share, Mitsubishi is entitled to about 10,000 t/yr of metal for its alloy production plant. Between 70% and 80% of Dowa's share, which amounts to about 120,000 t/yr, is marketed by Akita Zinc Solutions Co. Ltd. (Dowa's subsidiary). In addition to marketing zinc and zinc metal, Akita Zinc Solutions also produces zinc powder and zinc alloys. Consolidation with Mitsubishi's alloy plant would increase efficiency by reducing administrative costs (Metal Bulletin, 2002a).

Update

Pasminco Ltd. of Australia has decided to close its Cockle Creek smelter in New South Wales between 2006 and 2008. The decision is part of a long-term strategy for the restructuring of the company. The smelter does not provide consistent returns on investment and it does not fit Pasminco's plans of centering all its operations around the Century zinc mine in Queensland. The exact date of closure or sale will depend on zinc market conditions, capital investment requirements, and plant performance (Platts Metals Week, 2002b).

MIM Holdings Ltd. of Australia agreed to sell its Duisburg smelter in Germany to Belgium-based Sudamin Investment (subsidiary of U.S.-based private equity fund Safeguard

International Fund). According to MIM, the new owner will carry out an 18-month modernization program addressing environmental and feed issues, ultimately converting the smelter into a recycling operation. The smelter, which currently has a 90,000-t/yr zinc capacity and 40,000-t/yr lead capacity, draws one-half of its feed from secondary sources and the remainder is in the form of concentrates, mostly from MIM's McArthur River Mine in Northern Territory, Australia. Sudamin agreed to continue processing McArthur concentrates until the conversion to secondary production is completed. The sale, expected to be final in December 2002, is subject to government approvals related to Sudamin's financing (Metal Bulletin, 2002b).

The International Lead and Zinc Study Group, at its annual meeting in Stockholm during October, reported its outlook for 2002 and 2003. Despite production increase in Mexico and Peru, world zinc mine output is forecast to fall by 2% in 2002. In 2003, the reopening of the Tara Mine in Ireland, the commissioning of the Skorpion Mine in Namibia, and increased production in Australia, India, and Peru are expected to help increase world output by 5.4%. It is expected that a number of mainly temporary production cuts implemented throughout the year will limit the rise in world refinery production of zinc metal to 2.6% in 2002; the increase should reach 4.6% in 2003. Worldwide demand for zinc metal is forecast to rise by 3.4% this year and by a further 3.3% in 2003. The largest demand increase is anticipated in the United States (6.6% in 2002 and 4.5% in 2003). Demand in China is expected to propel zinc consumption in Asia to 4% increases in 2002 and 2003 (International Lead and Zinc Study Group, 2002).

References Cited

- CRU International Ltd., 2002, Production news—CRU Monitor—Zinc: CRU International Ltd., October, p. 7.
- International Lead and Zinc Study Group, 2002, ILZSG October Session/Forecasts: Stockholm, International Lead and Zinc Study Group press release, October 4, 5 p.
- Metal Bulletin, 2002a, Dowa and Mitsubishi Materials chew over zinc alloy deal: Metal Bulletin, no. 8713, October 7, p. 19.
- Metal Bulletin, 2002b, MIM pays Sudamin to take over Duisburg smelter: Metal Bulletin, no. 8720, October 31, p. 5.
- Metal Bulletin, 2002c, Votorantim to boost zinc mining capacity: Metal Bulletin, no. 8705, September 9, p. 7.
- Mining Journal, 2002, Modeling LME prices: Mining Journal, v. 339, no. 8705, October 4, p. 233.
- Platts Metals Week, 2002a, Japanese producers adjust zinc, lead targets: Platts Metals Week, v. 73, no. 40, October 7, p. 2, 3.
- Platts Metals Week, 2002b, Pasminco to close Cockle Creek by 2008: Platts Metals Week, v. 73, no. 43, October 28, p. 10.
- Teck Cominco Ltd., 2002, 3Q Interim report for the nine months ended September 30, 2002: Teck Cominco Ltd., Vancouver, October 23.

TABLE I
SALIENT ZINC STATISTICS 1/

(Metric tons, unless otherwise specified)

	2002				
	2001	July	August	September	January-September
Production:					
Mine, zinc content of concentrate	842,000	68,600	69,600	57,300	583,000
Mine, recoverable zinc	799,000	66,000	67,100	55,000	561,000
Smelter, refined zinc	299,000	19,100	16,200	16,200 e/	195,000
Consumption:					
Refined zinc, reported	543,000	34,300	35,800	35,500	301,000
Ores e/ (zinc content)	727	61	61	61	545
Zinc-base scrap e/ (zinc content)	191,000	15,900	15,900	15,900	127,000
Copper-base scrap e/ (zinc content)	176,000	14,700	14,700	14,700	132,000
Aluminum- and magnesium-base scrap e/ (zinc content)	1,430	120	120	120	1,080
Total e/	912,000	65,100 r/	66,500	66,200	561,000
Apparent consumption, metal 2/	1,140,000	77,500	99,600 r/	91,200 3/	877,000
Stocks of refined (slab) zinc, end of period:					
Producer 4/	7,380	6,830	7,010	7,010 e/	XX
Consumer 5/	57,100	57,300	57,100 r/	57,500	XX
Merchant	10,300	10,200	10,100	10,300	XX
Total	74,700	74,300	74,200 r/	74,800	XX
Shipments of zinc metal from Government stockpile					
	17,900	890	445	--	3,910
Imports for consumption:					
Refined (slab) zinc	813,000	83,000	75,800	NA	598,000 6/
Oxide (gross weight)	72,000	6,380	6,100	NA	46,700 6/
Ore and concentrate (zinc content)	84,000	6,020	9,580	NA	81,600 6/
Exports:					
Refined (slab) zinc	1,180	184	109	NA	849 6/
Oxide (gross weight)	11,300	736	681	NA	7,180 6/
Ore and concentrate (zinc content)	696,000	194,000	225,000	NA	487,000 6/
Waste and scrap (gross weight)	44,000	3,300	4,350	NA	29,000 6/
Price:					
London Metal Exchange, average, dollars per metric ton	\$885.43	\$794.45	\$747.24	\$755.88	\$780.44
Platts Metals Week North American Special High Grade, average, cents per pound	43.96	39.30	37.27	37.81	38.69

e/ Estimated. r/ Revised. NA Not available. XX Not applicable. -- Zero.

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

2/ Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

3/ Data based on reported consumption, stocks, and estimated trade data.

4/ Data from U.S. Geological Survey and American Bureau of Metal Statistics.

5/ Includes an estimate for companies that report annually.

6/ Includes data through August only.

TABLE 2
REFINED ZINC PRODUCED IN THE UNITED STATES 1/

(Metric tons)

Month	Beginning stocks 2/	Production	Shipments	Ending stocks 2/
2001:				
September	6,540	24,800	24,500	6,760
October	6,760	19,900	19,900	6,750
November	6,750	20,000	19,500	7,210
December	7,210	18,400	18,200	7,380
Year	XX	299,000	299,000	XX
2002:				
January	7,380	24,600	21,200	10,800
February	10,800	25,600	25,400	11,000
March	11,000	22,700	24,000	9,760
April	9,760	23,400	23,800	9,420
May	9,420	23,900	25,800	7,470
June	7,470	23,700	24,500	6,670
July	6,670	19,100	18,900	6,830
August	6,830	16,200	16,000	7,010
September	7,010	16,200 e/	16,200 e/	7,010
January-September	XX	195,000	196,000	XX

e/ Estimated. XX Not applicable.

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

2/ Includes stocks held at locations other than smelters.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

TABLE 3
APPARENT CONSUMPTION OF REFINED ZINC ACCORDING TO INDUSTRY USE AND PRODUCT 1/

(Metric tons)

Industry and product	2002				January- September
	2001	July	August	September 2/	
Galvanizing:					
Sheet and strip	432,000	31,800	40,400 r/	37,200	363,000
Other	146,000	10,700	15,100 r/	13,300	136,000
Total	578,000	42,500 r/	55,400 r/	50,400	500,000
Brass and bronze	148,000	12,300	16,400 r/	15,200	145,000
Zinc-base alloy	190,000	17,100	21,000	19,400	175,000
Other uses 3/	226,000	5,700 r/	6,700 r/	6,300	56,300
Grand total	1,140,000	77,500	99,600 r/	91,200	877,000

r/ Revised.

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

2/ Data based on reported consumption, stocks and estimated trade data.

3/ Includes zinc used in making zinc dust, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, rolled zinc, and miscellaneous uses not elsewhere specified.

TABLE 4
AVERAGE MONTHLY ZINC PRICES 1/

Period	North	LME cash	
	American ¢/lb.	¢/lb.	\$/t
2001:			
September	39.97	36.21	798.21
October	38.04	34.52	761.14
November	38.39	35.04	772.49
December	37.48	34.21	754.28
Year	43.96	40.16	885.43
2002:			
January	39.23	35.96	792.86
February	38.23	34.97	770.86
March	40.30	37.15	818.96
April	39.89	36.64	807.80
May	38.16	34.89	769.19
June	38.04	34.78	766.75
July	39.30	36.04	794.45
August	37.27	33.89	747.24
September	37.81	34.29	755.88
January-September	38.69	35.40	780.44

1/ Special High Grade.

Source: Platts Metals Week.

TABLE 5
U.S. EXPORTS OF ZINC 1/

Material	2001		2002 2/			
	Quantity (metric tons)	Value (thousands)	August		Year to date	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	1,180	\$1,290	109	\$119	849	\$814
Ore and concentrate (zinc content)	696,000	285,000	225,000	101,000	487,000	219,000
Waste and scrap (gross weight)	44,000	22,800	4,350	2,150	29,000	14,600
Powders, flakes, dust (zinc content)	4,690	7,230	251	369	3,300	4,930
Oxide (gross weight)	11,300	17,600	681	960	7,180	10,200
Chloride (gross weight)	1,730	1,630	103	115	1,280	1,340
Sulfate (gross weight)	4,780	2,900	244	146	2,080	1,290
Compounds, other (gross weight)	227	499	5	17	129	315

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

2/ Data for September 2002 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF ZINC 1/

Material	2001		2002 2/			
	Quantity (metric tons)	Value (thousands)	August		Year to date	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	813,000	\$773,000	75,800	\$61,800	598,000	\$493,000
Ore and concentrate (zinc content)	84,000	31,600	9,580	3,590	81,600	30,900
Waste and scrap (gross weight)	39,300	11,600	2,450	976	19,700	6,040
Powders, flakes, dust (zinc content)	26,700	45,000	2,950	4,890	20,600	32,400
Oxide (gross weight)	72,000	66,200	6,100	4,840	46,700	38,600
Chloride (gross weight)	946	1,020	67	83	460	490
Sulfate (gross weight)	16,200	7,330	903	479	13,100	6,870
Compounds, other (gross weight)	1,400	1,360	55	64	739	723

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

2/ Data for September 2002 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 7
SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE
STOCKPILE 1/

(Metric tons)

Period	Beginning inventory	Shipments	Ending inventory
2001:			
September	122,000	1,680	120,000
October	120,000	--	120,000
November	120,000	--	120,000
December	120,000	100	120,000
Year	XX	17,900	XX
2002:			
January	120,000	220	120,000
February	120,000	--	120,000
March	120,000	202	120,000
April	120,000	197	119,000
May	119,000	1,220	118,000
June	118,000	741	118,000
July	118,000	890	117,000
August	117,000	445	116,000
September	116,000	--	116,000
January-September	XX	3,910	XX

XX Not applicable. -- Zero.

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

Source: Defense Logistics Agency.

TABLE 8
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY 1/ 2/

(Metric tons)

Material and country	General imports			Imports for consumption		
	2001	2002 2/		2001	2002 2/	
		August	Year to date		August	Year to date
Ore and concentrate (zinc content):						
Australia	17,200	--	30,600	17,200	--	30,600
Mexico	10,700	--	9,380	10,700	--	9,380
Peru	54,900	9,570	38,300	54,900	9,570	38,300
Other	1,150	13	3,370	1,150	13	3,370
Total	84,000	9,580	81,600	84,000	9,580	81,600
Blocks, pigs, or slab:						
Australia	55,700	--	35,000	29,700	16	21,000
Brazil	17,900	1,330	12,600	17,900	1,330	12,600
Canada	442,000	39,700	345,000	438,000	39,700	345,000
China	31,800	12	27,800	7,260	15	42
Japan	7,280	2,000	10,500	274	--	--
Kazakhstan	88,900	13,100	74,600	88,900	13,100	74,600
Korea, Republic of	30,600	11,100	59,200	10,800	407	2,080
Mexico	141,000	11,300	96,300	140,000	11,300	96,300
Peru	48,800	2,920	21,900	47,600	2,920	19,900
Poland	8,530	1,000	6,890	8,530	1,000	6,890
Russia	14,400	5,610	7,750	14,400	5,610	7,750
Other	16,100 r/	408	18,600	10,000 r/	408	11,700
Total	903,000	88,400	716,000	813,000	75,800	598,000
Dross, ashes, fume (zinc content)	12,000	1,140	9,620	12,000	1,140	9,620
Grand total	999,000	99,200	807,000	909,000	86,500	689,000
Oxide (gross weight):						
Canada	47,500	3,860	29,800	47,500	3,860	29,800
China	227	98	716	227	98	716
Japan	1,110	90	562	1,110	90	562
Mexico	18,900	1,850	13,200	18,900	1,850	13,200
Netherlands	2,820	135	1,910	2,820	135	1,910
Other	1,390	70	472	1,390	70	472
Total	72,000	6,100	46,700	72,000	6,100	46,700
Other (gross weight):						
Waste and scrap	39,300	2,450	19,700	39,300	2,450	19,700
Sheets	7,240	337	1,090	7,240	337	1,090
Powders, flakes, dust (zinc content)	26,700	2,950	20,600	26,700	2,950	20,600

r/ Revised. -- Zero.

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

2/ Data for September 2002 were not available at time of publication.

Source: U.S. Census Bureau.