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Mineral Industry Surveys

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ZINC IN OCTOBER 2003

Domestic mine production in October, at 60,800 metric tons (t), was about 8% less than in September and about 14% less than in October 2002. Smelter production, at 21,800 t, was about 1% more than in September and about 35% more than a year before. Apparent consumption, at 76,500 t, was about 16% lower than in September and nearly 13% lower than in October 2002.

The Platts Metals Week average monthly composite price for North American Special High Grade zinc increased to 43.70 cents per pound in September. Compared with that of October 2002, the increase was about 16%, or about 6 cents per pound.

The annual conference of the International Lead and Zinc Study Group usually signals the start of treatment charge (TC) negotiations. This year, the mining companies and the companies that operate smelters appear to be further apart than in previous years due to divergent views of the zinc market in 2004. The view among the smelters is that TC should increase from the 2003 level because closures of several primary smelters resulted in an oversupply of concentrates. The mining companies, however, argue for a reduction in the TC because there is still a concentrate shortage. It may be that the smelter closures helped reduce the concentrate shortage but did not eliminate the imbalance between concentrate supply and smelter capacity. The decline of primary zinc metal production in 2003 is estimated at over 200,000 t, and much of the displaced concentrate has been readily absorbed by smelters that were producing below nameplate capacity (CRU International Ltd., 2003b). The closure of several mines in Europe and Canada contributed to a reduction of mine output in 2002. This, in turn, precipitated a fall in TC and consequently put the burden of low zinc prices on the zinc smelters. In competition with other smelters for scarce zinc concentrates, smelters lowered their TC in 2003 to about $145 per metric ton, down from $168 per ton a year earlier. In view of smelter closures, smelting companies are hoping to charge more for treating zinc concentrate next year (Metal-Pages, 2003c§[1]).

[1]References with a section mark (§) are found in the Internet References Cited section.

The desire of smelting companies for higher TC may be satisfied in 2004; many industry experts believe that zinc prices have reached bottom. According to Teck Cominco Ltd., the three factors influencing zinc prices are mine production, refinery profitability, and China. China is the world's leading zinc miner, refiner, and consumer. Its consumption is growing at about 14% annually owing to the addition of many new galvanizing lines. Until 2001, China was a net exporter of concentrate and was able to influence zinc prices by exporting more than one-half million tons of zinc metal. Now, owing to the closure of some small mines and increased consumption, China imports about 300,000 metric tons per year (t/yr) of zinc concentrate from Western countries, mainly Australia and Peru. Lower mine production resulted in a concentrate shortage in 2003 and may limit metal production in 2004. Given low prices, low and falling TC, and low premiums, about half the refineries in the world are not profitable. This situation has led to the closing of five refineries, capacity losses of 500,000 t, and higher zinc prices (Platts Metals Week, 2003b).

Ontzinc Corp. of Canada has begun preliminary work to reopen the Balmat zinc mine in New York. The company recently acquired a majority interest in the mine, with an option to acquire a 100% interest. Ontzinc is planning an annual throughput of about 360,000 t of ore producing about 41,000 t of zinc in concentrate; by 2007, throughput should increase to 500,000 t of ore and 51,000 t of zinc in concentrate (Mining Journal, 2003c).

Falconbridge Ltd. restarted operations at its Kidd Creek metallurgical complex on October 6 and by the end of the month was operating at full capacity. The plant in Timmins, Ontario, Canada, was shut for a scheduled annual maintenance at the end of June, but closure was extended to 12 weeks owing to depressed zinc prices. Kidd Creek is expected to produce about 110,000 t of zinc in 2003, about 35,000 t less than in 2002 (Mining Journal, 2003b).

Update

After an unsuccessful bid in late May, Sun Capital Partners Inc. reportedly has a second opportunity to acquire the bankrupt Horsehead Industries Inc. On November 21, the U.S.

Bankruptcy Court for the Southern District of New York ruled that Horsehead Industries and associated companies will be auctioned in December 2003. Although 30 companies were initially interested in purchasing Horsehead, and one company even submitted an offer, Sun Capital reportedly is the front-runner to become the new owner of the largest zinc producer in the United States and the largest zinc recycler in the world. Horsehead operates a 180,000-t/yr smelter in Monaca, PA, and four recycling facilities in four States. It has contracts with more than 50 steel companies that pay Horsehead to process their electric arc furnace dust. In order to ensure a successful takeover, Sun Capital (a Boca Raton, FL, investment firm) obtained the support of major Horsehead creditors and its Monaca plant union members (Platts Metals Week, 2003c).

Kazakhmys of Kazakhstan has commissioned its new 100,000-t/yr Balkhash zinc smelter in the Karagandinskaya Oblast. The smelter is expected to produce 40,000 t of zinc in 2004, which is to increase to 100,000 t/yr by 2006. The smelter has cost $150 million to build and, along with Yuhzpolimetall's new 20,000-t/yr smelter, will increase zinc-smelting capacity of Kazakhstan to 420,000 t/yr in 2004. Most of the concentrate will be produced by Kazakhmys' mines, which currently have a total capacity of 85,000 t/yr of zinc in concentrate. AO Kaztsink, with two smelters that have a combined capacity of 300,000 t/yr, has been the only zinc producer in Kazakhstan (CRU International Ltd., 2003a). Before the new smelters were built, most of the zinc concentrate produced by Kazakhmys was exported to Uzbekistan, Russia, and China. Despite increased Russian production in the past few years, supplies are still insufficient to satisfy the demand of the Cheliabinks Electrolytic Zinc Plant and Electrozinc Works in Vladikavkaz. Russian imports of zinc concentrate have exceeded 200,000 t/yr, of which about 80% is shipped to the Electrozinc plant. Because of their long distance from Russian smelters, the production of Far East companies, such as Dalpolimetall and Yaroslavsky GOP, is exported, mainly to China. Compared with that of 2001, Russian zinc concentrate exports in 2002 increased by 77% to 130,000 t (Mining Journal, 2003a).

Kagara Zinc Ltd. of Australia has decided to increase the capacity of its Mt. Garnet treatment plant to 148,000 t/yr of concentrate from 90,000 t/yr. The project should be completed by yearend 2004 at a cost of about $3.6 million. Ore for the upgrade would be sourced from the current Surveyor deposit, and then from the Dry River South and Balcooma polymetallic deposits. Balcooma also contains significant amounts of copper for which Kagara plans to build a dedicated copper circuit for $1.8 million (Platts Metals Week, 2003a).

Shares of Australia's Pasminco Ltd. could be offered for sale in the first half of 2004. Observers believe that the time is right for an initial public offering (IPO) since the zinc price increased to nearly $900 per metric ton in November from $800 per metric ton in mid-August. However, the continued strength of the Australian dollar and financial losses by the company make the IPO problematic; for the 12 months to June 2003, Pasminco posted a $226 million loss on $1.8 billion in revenues (Metal-Pages, 2003a§).

Massey University in New Zealand has signed an agreement with U.S.-based Anzode Inc. to market a new zinc battery technology developed by the Nanomaterials Research Center. The new silver-zinc battery lasts four times longer than existing silver-zinc batteries, and the nickel-zinc version lasts two-and-a-half times longer than nickel hydride batteries and four times longer than conventional lead-acid batteries. The disadvantage of zinc when used in batteries is its instability, which is curtailed in the new battery by wrapping the zinc cells with materials ranging from plastic to carbon. Rather than attempting to treat symptoms of the instability, the new technology addresses the underlying cause of the problem. The zinc electrode in the new battery is stable and does not change its shape or short out. The new technology already has been patented in more than 30 countries and eventually could revolutionize the $200 billion global battery market (Metal-Pages, 2003b§).

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TABLE 1
SALIENT ZINC STATISTICS[1]

(Metric tons, unless otherwise specified)

	2002	2003			
	January-December	August	September	October	January-October
Production:					
Mine, zinc content of concentrate	780,000	62,000	65,800 r	60,800	641,000
Mine, recoverable zinc	754,000	59,600	63,300 r	58,500	617,000
Smelter, refined zinc	259,000	23,500	21,600	21,800	228,000
Consumption:					
Refined zinc, reported	421,000	35,500	36,800	36,900	352,000
Ores[e] (zinc content)	617 r	61	61	61	606
Zinc-base scrap[e] (zinc content)	189,000	15,900	15,900	15,900	159,000
Copper-base scrap[e] (zinc content)	176,000	14,700	14,700	14,700	147,000
Aluminum-and magnesium-base scrap[e] (zinc content)	1,430	120	120	120	1,200
Total[e]	789,000	66,300	67,500	67,700	659,000
Apparent consumption, metal[2]	1,150,000	85,000	90,700	76,500	867,000 [3]
Stocks of refined (slab) zinc, end of period:					
Producer[4]	XX	8,230	7,790	8,300	XX
Consumer[5]	XX	54,900	53,300	54,900	XX
Merchant	XX	9,810	9,810	9,810	XX
Total	XX	73,000	70,900	73,000	XX
Shipments of zinc metal from Government stockpile	5,040	712	841	--	6,800
Imports for consumption:					
Refined (slab) zinc	874,000	66,400	57,000	NA	560,000 [6]
Oxide (gross weight)	69,700	8,020	8,030	NA	73,400 [6]
Ore and concentrate (zinc content)	122,000	5,440	11,400	NA	106,000 [6]
Exports:					
Refined (slab) zinc	1,160	216	120	NA	1,080 [6]
Oxide (gross weight)	10,800	1,140	938	NA	9,100 [6]
Ore and concentrate (zinc content)	822,000	236,000	152,000	NA	604,000 [6]
Waste and scrap (gross weight)	47,700	4,420	4,210	NA	34,600 [6]
Price:					
London Metal Exchange, average, dollars per metric ton	$778.38	$817.48	$817.81	$897.54	$803.64
Platts Metals Week North American Special High Grade, average, cents per pound	38.64	40.10	40.07	43.70	39.50

[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 September only.

TABLE 2
REFINED ZINC PRODUCED IN THE UNITED STATES[1]

(Metric tons)

Month	Beginning stocks[2]	Production	Shipments	Ending stocks[2]
2002:				
October	7,470	16,100	16,600	7,020
November	7,020	21,800	20,800	7,970
December	7,970	23,500	22,900	8,550
Year	XX	259,000	257,000	XX
2003:				
January	8,550	24,900	21,500	11,900
February	11,900	22,800	25,800	8,930
March	8,930	21,700	24,500	6,110
April	6,110	23,000	20,700	8,340
May	8,340	22,400	23,500	7,300
June	7,300	24,200	23,700	7,770
July	7,770	22,100	21,500	8,360
August	8,360	23,500	23,600	8,230
September	8,230	21,600	22,100	7,790
October	7,790	21,800	21,300	8,300
January-October	XX	228,000	228,000	XX

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-December	2003 August	2003 September	2003 October[2]	2003 January-October
Galvanizing:					
Sheet and strip	477,000	36,100	37,600	31,900	367,000
Other	175,000	11,500	12,500	9,600	121,000
Total	652,000	47,600	50,100	41,500	487,000
Brass and bronze	189,000	12,800	15,000	12,600	138,000
Zinc-base alloy	233,000	17,900	18,800	16,300	184,000
Other uses[3]	71,700	6,600	6,800	6,200	57,500
Grand total	1,150,000	85,000	90,700	76,500	867,000

[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 American ¢/lb.	LME cash ¢/lb.	LME cash $/t
2002:			
October	37.71	34.21	754.30
November	38.09	34.70	764.91
December	39.69	36.17	797.36
Year	38.64	35.31	778.38
2003:			
January	38.72	35.43	781.01
February	38.68	35.60	784.80
March	38.88	35.86	790.60
April	37.23	34.21	754.30
May	38.18	35.17	775.33
June	38.87	35.85	790.31
July	40.54	37.52	827.19
August	40.10	37.08	817.48
September	40.07	37.10	817.81
October	43.70	40.71	897.54
January-October	39.50	36.45	803.64

[1]Special High Grade.

Source: Platts Metals Week.

TABLE 5
U.S. EXPORTS OF ZINC[1]

Material	2002 Quantity (metric tons)	2002 Value (thousands)	2003[2] September Quantity (metric tons)	2003[2] September Value (thousands)	2003[2] Year to date Quantity (metric tons)	2003[2] Year to date Value (thousands)
Refined (slab) zinc	1,160	$1,210	120	$134	1,080	$1,130
Ore and concentrate (zinc content)	822,000	322,000	152,000	64,700	604,000	240,000
Waste and scrap (gross weight)	47,700	23,000	4,210	2,560	34,600	21,900
Powders, flakes, dust (zinc content)	5,660	8,120	628	902	5,070	6,770
Oxide (gross weight)	10,800	14,600	938	926	9,100	11,000
Chloride (gross weight)	1,950	1,930	119	172	1,080	1,170
Sulfate (gross weight)	2,900	1,760	146	84	1,820	1,090
Compounds, other (gross weight)	217	600	3	17	121	319

[1]Data are rounded to no more than three significant digits.
[2]Data for October 2003 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF ZINC[1]

Material	2002		2003[2]			
			September		Year to date	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	874,000	$716,000	57,000	$50,200	560,000	$468,000
Ore and concentrate (zinc content)	122,000	44,600	11,400	4,610	106,000	34,200
Waste and scrap (gross weight)	31,200	9,530	797	506	7,770	4,080
Powders, flakes, dust (zinc content)	30,900	47,800	2,090	3,090	20,700	31,200
Oxide (gross weight)	69,700	57,600	8,030	5,450	73,400	54,100
Chloride (gross weight)	716	775	25	48	498	643
Sulfate (gross weight)	20,100	10,300	1,610	681	20,300	9,110
Compounds, other (gross weight)	1,030	1,180	165	116	655	650

[1]Data are rounded to no more than three significant digits.
[2]Data for October 2003 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
2002:			
October	110,000	1,130	109,000
November	109,000	--	109,000
December	109,000	--	109,000
Year	XX	5,040	XX
2003:			
January	109,000	516	108,000
February	108,000	--	108,000
March	108,000	--	108,000
April	108,000	200	108,000
May	108,000	997	107,000
June	107,000	--	107,000
July	107,000	3,530	104,000
August	104,000	712	103,000
September	103,000	841	102,000
October	102,000	--	102,000
January-October	XX	6,800	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)

	General imports			Imports for consumption		
		2003			2003	
Material and country	2002	September	Year to date	2002	September	Year to date
Ore and concentrate (zinc content):						
Australia	41,800	--	20,200	41,800	--	20,200
Ireland	6,570	--	25,700	6,570	--	25,700
Mexico	12,700	--	1,460	12,700	--	1,460
Peru	61,100	11,400	58,400	61,100	11,400	58,400
Other	118	--	--	118	--	--
Total	122,000	11,400	106,000	122,000	11,400	106,000
Blocks, pigs, or slab:						
Australia	35,000	--	22,000	21,000	--	14,000
Brazil	30,200	2,920	18,800	30,200	2,920	13,600
Canada	523,000	39,100	376,000	523,000	39,100	376,000
China	39,700	--	23,800	1,040	--	22
Japan	10,500	--	50	--	--	--
Kazakhstan	93,200	--	12,000	93,200	--	12,000
Korea, Republic of	76,200	--	34,000	2,480	--	24
Mexico	136,000	12,400	104,000	136,000	12,400	104,000
Peru	36,000	2,540	31,300	34,300	2,540	30,900
Poland	9,340	--	1,600	9,340	--	1,600
Russia	10,700	--	--	10,700	--	--
Other	25,200	--	8,930	13,100	--	8,000
Total	1,020,000	57,000	633,000	874,000	57,000	560,000
Dross, ashes, fume (zinc content)	15,500	1,080	10,300	15,500	1,080	10,300
Grand total	1,160,000	69,400	749,000	1,010,000	69,400	676,000
Oxide (gross weight):						
Canada	44,800	3,880	35,600	44,800	3,880	35,600
China	838	69	473	838	69	473
Japan	869	98	778	869	98	778
Mexico	19,900	3,640	29,700	19,900	3,640	29,700
Netherlands	2,640	272	3,560	2,640	272	3,560
Other	760	67	3,210	760	67	3,210
Total	69,700	8,030	73,400	69,700	8,030	73,400
Other (gross weight):						
Waste and scrap	31,200	797	7,770	31,200	797	7,770
Sheets	1,640	255	1,560	1,640	255	1,560
Powders, flakes, dust (zinc content)	30,900	2,090	20,700	30,900	2,090	20,700

-- Zero.

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

[2]Data for October 2003 were not available at time of publication.

Source: U.S. Census Bureau.