

Mineral Industry Surveys

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ZINC IN OCTOBER 2001

Domestic mine production in October, estimated at 67,500 metric tons (t), was about 6% more than in September and about 3% more than in October 2000. Smelter production, at 19,900 t, was about 20% less than in September but was about 30% less than a year before. Apparent consumption, at 87,900 t, was about 9% lower than in September and about 21% lower than in October 2000.

The Platts Metals Week average monthly composite price for North American Special High Grade zinc declined by about 5%, to 38.04 cents per pound in October. It was the 9th consecutive monthly decline this year. Compared with October 2000, the decrease was about 30%, or about 16.2 cents.

Following 3 years of concentrate surpluses and 12 months of declining zinc prices, several companies decided to close some unproductive zinc mining operations; some of the firms hoped that the closings would be temporary. These mine closings probably will not help to reduce the metal surplus because the production of zinc will continue to be higher than consumption and, in fact, is expected to increase by 325,000 t by 2002. A large portion of this increase will be supplied by the Trail smelter in British Columbia, where Cominco Ltd. is ready to return to full production after selling electric power rather than smelting zinc for several months in 2001. This increased metal production is possible because of the abundance of concentrates on the market. Even if all the mines that announced suspension of production would remain closed by the end of 2002, the concentrate production would still be about 200,000 t more than what is needed to balance supply and demand, according to some analysts (CRU International Ltd., 2001). The mine production cuts, however, could help producers lower treatment charges. The current treatment charge is based on a zinc price of \$1,000 per ton, which will likely be lowered to \$900 or even \$800 per ton (Metal Bulletin, 2001c).

In the United States, production of galvanized steel declined by 11.3% compared with the same period in 2000—an 80,000 t decrease in zinc consumption (CRU International Ltd., 2001).

The decline compelled ASARCO Incorporated (the U.S. subsidiary of Grupo Mexico S.A. de C.V.) to suspend zinc mining and processing at its Tennessee mines. As required under the Workers Adjustment Retraining Act, Asarco notified its 363 workers 60 days before planned closure in mid-November. Ore from the three operating mines (the Young Mine, the Immel Mine, and the Coy Mine) was processed at the Young mill, and in 2000 it produced 56,800 t of zinc in concentrate. According to the announcement, Asarco will continue to monitor the zinc market and would consider resuming zinc operations should the long-term market conditions improve. Concentrate from the Young mill was shipped to Pasmenco Ltd.'s smelter in Clarksville, TN, and Big River Zinc Corp.'s smelter in Sauget, IL. The concentrate from Tennessee will be replaced by imports at both smelters (Platts Metals Week, 2001).

Breakwater Resources Ltd. of Canada was the first of foreign companies to announce closure, when on October 29 it made public its intention to cease operation at the Nanisivik zinc mine on Baffin Island in the Canadian province of Nunavut. Breakwater may close the mine in September 2002 (Platts Metals Week, 2001).

Boliden Ltd. will temporarily cease production at its Myra Falls zinc-copper mine in British Columbia for 3 months, beginning on December 3. The suspension will deprive the market of about 30,000 t of concentrate. Boliden will retain a small workforce to conduct care and maintenance, but most employees will be laid off during the suspension (Metal Bulletin, 2001d). During the suspension of operations, Boliden will seek either a partnership or an outright sale of the Myra Falls Mine (Metal Bulletin, 2001d).

Hudson Bay Mining & Smelting Co. Ltd. (a subsidiary of Anglo American plc) also succumbed to pressure of low zinc prices and decided to permanently close its Ruttan zinc-copper mine in Manitoba, Canada, by May 2002. All of the concentrate production, amounting to about 30,000 metric tons per year (t/yr), was processed at the Flin Flon smelter, which

was recently expanded to a capacity of 114,000 t/yr (Metal Bulletin, 2001d).

Outokumpu Oy of Finland also announced that it will put its 200,000 t/yr Tara zinc mine in Ireland on care and maintenance. Last deliveries of concentrate will leave the mine in December 2001. Concentrate from the Tara Mine, which supplied up to 15% of feed for the Kokkola plant in Finland and the Odda plant in Norway, will be replaced by concentrate purchased on the open market. Should the price for zinc metal improve, Outokumpu could possibly restart production at the Tara Mine (Platts Metals Week, 2001). The possible reopening of the Tara Mine, however, may be done by a new company because Outokumpu may form a joint venture, with a minority ownership in the mine, or quit base metal mining completely and focus on smelting, fabrication, and technology. In this regard, Outokumpu is following the example of other European metal producers, by taking advantage of the high level of technical knowledge and education available in Europe. High labor cost in an industry that is labor intensive puts European mines at a cost disadvantage with other countries. Another reason for leaving direct involvement in mining is the low return that Outokumpu has achieved with relatively large amounts of capital (Mining Journal, 2001d). The company's first step in concentrating on processing was the expansion of its recently completed Kokkola plant to 260,000 t/yr, using the Outokumpu-developed process for direct leaching of concentrate. The new process has less impact on the environment and uses raw materials more efficiently than traditional methods of processing (Mining Journal, 2001c).

Compañía Minera Volcán S.A. of Peru is searching for a partner that would provide technical know-how and funds after a period of extraordinary growth that resulted from the firm's acquisition of three mines from the former state-owned Empresa Minera del Centro del Peru S.A. (Centromin). Volcán now owns the Andayshagua, Cungar, Mahr Tunel, Paragsha (formerly known as Cerro de Pasco), and San Cristobal mines. The company has not yet decided if it would be willing to give up majority ownership in its mines in order to attract a partner. Volcán reported a third-quarter loss of \$5.8 million compared with a net income of \$6.3 million in the same quarter of 2000 because lower metal prices cut revenues by about 30% (Metal Bulletin, 2001b).

Compañía Minera Antamina has achieved commercial production at its Antamina copper-zinc project in northern Peru more than 4 months ahead of schedule. Commercial production is defined as 80% of the project's designed output rate over a period of 90 days. Commissioning and start-up began in late May of this year, and by October 1 the mill had treated more than 6.7 million metric tons (Mt/yr) of ore. The operation, owned by Billiton plc (33.75%), Noranda Inc. (33.75%), Teck Cominco Ltd. (22.5%), and Mitsubishi Corp. (10%), is expected to produce about 1.5 Mt/yr of concentrate yielding an average of 306,000 t of copper and 284 t of zinc annually over the first 10 years (Mining Journal, 2001a).

The Mednogorsk Copper-Sulfur Works of Urals Mining &

Metallurgical Co. (UGMK) in Russia is experimenting with production of combined copper-zinc concentrate. The company, mainly a copper producer, hopes that the manufacture of mixed concentrates will be more cost-effective than the processing of copper concentrate. Laboratory-scale testing in November produced a high-grade zinc intermediary product with low level of impurities, which is to be refined at the company's Uralelectromed plant. If the feasibility study for production of 100,000 t/yr of zinc, which is presently underway, is successful, UGMK would consider converting Uralelectromed's unused copper foil plant into a facility for zinc refining. Most of the ore mined by UGMK is polymetallic, and the company accumulated large volumes of zinc in by-product. With an addition of ore from other North Urals deposits, production of zinc could reach 150,000 t/yr (Metal Bulletin, 2001a).

Update

The Indian Government has been delayed in its attempt to privatize Hindustan Zinc Ltd. (HZL), the country's largest zinc producer. As late as November 9, five companies were interested in HZL, but only Bombay-based Sterlite Industries Ltd. proceeded to make an offer. That offer, for a 26% stake in the state-owned company, was rejected by the Government because it failed to meet the reserve price, which remained unspecified. Other competing companies withdrew their offer after the Government imposed too many conditions on the sale. The Department of Disinvestment will now reconsider demands from some of the original bidders, which include an environmental audit and indemnity from the Government over any health risks. HZL owns six lead-zinc mines, with a combined capacity of 3.5 Mt/yr of ore, and four smelters, with a combined capacity of 169,000 t/yr of zinc. The HZL is the latest large company to be sold under the Indian Government's 10-year-old privatization plan (Mining Journal, 2001b).

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TABLE 1
SALIENT ZINC STATISTICS 1/

(Metric tons, unless otherwise specified)

	2000	2001			
	January- December	August	September	October	January- October
Production:					
Mine, zinc content of concentrate	837,000	70,300	63,500 r/	67,500 e/	675,000
Mine, recoverable zinc	814,000	67,600	60,900 r/	65,000 e/	650,000
Smelter, refined zinc	363,000	19,800	24,800	19,900	260,000
Oxide (gross weight)	107,000	1,360	3,450	1,430	57,800
Consumption:					
Refined zinc, reported	640,000	39,200	37,700 r/	35,700	397,000
Ores e/ (zinc content)	225	19	19	19	190
Zinc-base scrap e/ (zinc content)	223,000	18,600	18,600	18,600	186,000
Copper-base scrap e/ (zinc content)	211,000	17,600	17,600	17,600	176,000
Aluminum- and magnesium-base scrap e/ (zinc content)	1,360	113	113	113	1,130
Total e/	1,080,000	75,500	74,000 r/	72,000	761,000
Apparent consumption, metal 2/	1,330,000	76,600	96,900 r/	87,900 3/	963,000
Stocks of refined (slab) zinc, end of period:					
Producer 4/	7,890	6,580	7,220	6,750	XX
Consumer 5/	58,300	60,600	60,000 r/	58,000	XX
Merchant	10,500	10,300	9,620	10,800	XX
Total	76,600	77,500	76,800 r/	75,500	XX
Shipments of zinc metal from Government stockpile	38,800	3,340	1,680	1,850 e/	19,600
Imports for consumption:					
Refined (slab) zinc	915,000	69,800	64,300	NA	618,000 6/
Oxide (gross weight)	71,000	5,470	5,380	NA	53,700 6/
Ore and concentrate (zinc content)	52,800	266	10,600	NA	49,300 6/
Exports:					
Refined (slab) zinc	2,770	93	156	NA	982 6/
Oxide (gross weight)	7,080	777	947	NA	8,020 6/
Ore and concentrate (zinc content)	523,000	171,000	220,000	NA	580,000 6/
Waste and scrap (gross weight)	36,100	3,790	2,770	NA	33,100 6/
Price:					
London Metal Exchange, average, dollars per metric ton	\$1,127.73	\$827.68	\$798.21	\$761.14	\$909.83
Platts Metals Week North American Special High Grade, average, cents per pound	55.61	41.31	39.97	38.04	45.16

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

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/
2000:				
October	7,470	28,500	28,100	7,900
November	7,900	28,500	28,500	7,890
December	7,890	28,500	28,500	7,890
Year	XX	363,000	365,000	XX
2001:				
January	7,890	31,400	29,400	9,900
February	9,900	31,300	30,200	11,000
March	11,000	30,600	30,200	11,500
April	11,500	32,000	32,800	10,700
May	10,700	28,800	30,500	9,000
June	9,000	22,600	23,000	8,580
July	8,580	18,900	20,100	7,340
August	7,340	19,800	20,600	6,580
September	6,580	24,800	24,100	7,220
October	7,220	19,900	20,400	6,750
January-October	XX	260,000	261,000	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
ZINC OXIDE PRODUCED IN THE UNITED STATES 1/ 2/

(Metric tons, gross weight)

Period	Beginning stocks	Production	Shipments	Ending stocks
2000:				
October	3,390	8,440	8,410	3,420
November	3,420	8,320	8,320	3,420
December	3,420	8,320	8,320	3,420
Year	XX	107,000	107,000	XX
2001:				
January	3,420	9,410	9,010	3,820
February	3,820	9,800	9,360	4,260
March	4,260	10,300	10,200	4,340
April	4,340	10,200	10,100	4,410
May	4,410	8,870	10,200	3,090
June	3,090	2,440	4,100	1,430
July	1,430	605	1,190	844
August	844	1,360	70	2,140
September	2,140	3,450	174	5,410
October	5,410	1,430	4,600	2,240
January-October	XX	57,800	59,000	XX

XX Not applicable.

1/ Excludes impure zinc oxide produced from other processes.

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

TABLE 4
ESTIMATED DISTRIBUTION OF ZINC OXIDE SHIPMENTS BY INDUSTRY 1/ 2/ 3/

(Metric tons, gross weight)

Industry	2000	2001			January- October
	January- December	August	September	October	
Agriculture	1,600	1	2	46	1,170
Ceramics	5,400	2	5	138	2,700
Chemicals	23,300	19	47	1,240	13,300
Paints	3,790	2	4	92	1,930
Photocopying	2,930	3	7	184	1,740
Rubber	68,700	41	107	2,800	37,000
Other	1,490	2	2	92	1,070
Total	107,000	70	174	4,600	59,000

1/ Distribution of U.S. producers only. Imports excluded because distribution by industry cannot be distinguished.

2/ May include in-house consumption.

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

TABLE 5
APPARENT CONSUMPTION OF REFINED ZINC ACCORDING TO
INDUSTRY USE AND PRODUCT 1/

(Metric tons)

Industry and product	2000	2001			January- October
	January- December	August	September r/ October 2/	October 2/	
Galvanizing:					
Sheet and strip	517,000	31,800	40,400	37,300	394,000
Other	190,000	10,000	14,100	12,500	138,000
Total	707,000	41,800	54,500	49,900	532,000
Brass and bronze	184,000	10,500	14,300	13,300	135,000
Zinc-base alloy	246,000	16,900	17,300	16,500	176,000
Other uses 3/	192,000 r/	7,600	10,800	8,200	120,000
Grand total	1,330,000 r/	76,600	96,900	87,900	963,000

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 6
AVERAGE MONTHLY ZINC PRICES 1/

Period	North American	LME cash	
	¢/lb.	¢/lb.	\$/t
2000:			
October	54.21	49.69	1,095.44
November	52.54	48.02	1,058.67
December	52.57	48.05	1,059.40
Year	55.61	51.15	1,127.73
2001:			
January	51.28	46.86	1,033.06
February	50.39	46.29	1,020.51
March	49.52	45.56	1,004.41
April	48.01	43.96	969.08
May	46.34	42.53	937.62
June	44.34	40.58	894.57
July	42.42	38.65	852.06
August	41.31	37.54	827.68
September	39.97	36.21	798.21
October	38.04	34.52	761.14
January-October	45.16	41.27	909.83

1/ Special High Grade.

Source: Platts Metals Week.

TABLE 7
U.S. EXPORTS OF ZINC 1/

Material	2001 2/					
	2000		September		Year to date	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	2,770	\$3,380	156	\$191	982	\$1,090
Ore and concentrate (zinc content)	523,000	298,000	220,000	109,000	580,000	257,000
Waste and scrap (gross weight)	36,100	21,600	2,770	1,400	33,100	17,400
Powders, flakes, dust (zinc content)	4,830	9,030	249	424	3,160	5,120
Oxide (gross weight)	7,080	12,400	947	1,270	8,020	11,700
Chloride (gross weight)	3,290	2,440	292	186	1,410	1,310
Sulfate (gross weight)	5,430	3,350	379	226	3,720	2,220
Compounds, other (gross weight)	447	1,030	6	12	177	373

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

2/ Data for October 2001 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF ZINC 1/

Material	2001 2/					
	2000		September		Year to date	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	915,000	\$1,100,000	64,300	\$54,700	618,000	\$611,000
Ore and concentrate (zinc content)	52,800	26,900	10,600	4,050	49,300	20,100
Waste and scrap (gross weight)	36,500	16,200	2,200	476	31,300	8,470
Powders, flakes, dust (zinc content)	23,000	45,700	2,250	3,630	19,000	32,500
Oxide (gross weight)	71,000	74,200	5,380	4,650	53,700	51,200
Chloride (gross weight)	1,110	1,240	117	108	793	795
Sulfate (gross weight)	13,700	6,800	1,010	489	11,800	5,280
Compounds, other (gross weight)	1,670	1,710	62	93	1,170	1,140

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

2/ Data for October 2001 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 9
SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE
STOCKPILE 1/

(Metric tons)

Period	Beginning inventory	Shipments	Ending inventory
2000:			
October	144,000	--	144,000
November	144,000	5,400	139,000
December	139,000	995	138,000
Year	XX	38,800	XX
2001:			
January	138,000	1,790	136,000
February	136,000	2,080	134,000
March	134,000	1,800	132,000
April	132,000	2,020	130,000
May	130,000	1,710	129,000
June	129,000	771	128,000
July	128,000	2,570	125,000
August	125,000	3,340	122,000
September	122,000	1,680	120,000
October	120,000	1,850 e/	118,000
January-October	XX	19,600	XX

e/ Estimated. 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 10
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY 1/

(Metric tons)

Material and country	General imports			Imports for consumption		
	2000	2001 2/		2000	2001 2/	
		September	Year to date		September	Year to date
Ore and concentrate (zinc content):						
Australia	20,200	--	17,200	20,200	--	17,200
Mexico	7,490	--	7,360	6,930	--	7,360
Netherlands	10,100	--	--	10,100	--	--
Peru	20,300	10,600	23,600	15,400	10,600	23,600
Other	379	--	1,150	68	--	1,150
Total	58,600	10,600	49,300	52,800	10,600	49,300
Blocks, pigs, or slab:						
Australia	45,900	20,100	54,600	45,900	2,010	28,500
Brazil	9,270	1,000	15,000	9,270	1,000	15,000
Canada	534,000	25,700	325,000	534,000	25,700	325,000
China	24,500	2,680	24,600	25,900	16	6,060
Kazakhstan	65,500	12,200	70,800	65,500	12,200	70,800
Korea, Republic of	48,100	--	22,600	48,100	--	10,800
Mexico	90,800	17,300	102,000	90,800	15,700	100,000
Peru	56,300	5,970	32,700	56,300	5,970	32,800
Russia	24,200	1,640	14,400	24,200	1,640	14,400
Other	15,100	6,100	20,500	15,100	123	14,400
Total	913,000	92,700	682,000	915,000	64,300	618,000
Dross, ashes, fume (zinc content)	15,500	1,070	8,580	15,500	1,070	8,580
Grand total	987,000	104,000	740,000	983,000	76,000	676,000
Oxide (gross weight):						
Canada	44,100	3,780	35,600	44,100	3,780	35,600
China	1,170	40	205	1,170	40	205
Germany	1,100	15	208	1,100	15	208
Japan	1,110	13	753	1,110	13	753
Mexico	19,500	1,250	13,800	19,500	1,250	13,800
Netherlands	2,430	218	2,140	2,430	218	2,140
Other	1,670	63	1,000	1,670	63	1,000
Total	71,000	5,380	53,700	71,000	5,380	53,700
Other (gross weight):						
Waste and scrap	36,500	2,200	31,300	36,500	2,200	31,300
Sheets	9,380	816	5,490	9,380	816	5,490
Powders, flakes, dust (zinc content)	23,000	2,250	19,000	23,000	2,250	19,000

-- Zero.

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

2/ Data for October 2001 were not available at time of publication.

Source: U.S. Census Bureau.