

# Mineral Industry Surveys

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## ZINC IN DECEMBER 2006

Domestic mine production (recoverable) of zinc in December 2006 was 47,400 metric tons (t), according to the U.S. Geological Survey. Average daily mine production in December was 1,530 t, 11% lower than that in November and 24% lower than that in December 2005. Mine production for 2006 was 3% lower than that of 2005. Reported consumption of 32,400 t of refined zinc was 1% higher than that in November, but 5% lower than that in December 2005.

The Platts Metals Week average price for North American Special High Grade Zinc for the month of December was 211.83 cents per pound, 0.5% higher than the November average price and an increase of 141% from the December 2005 average price. The average London Metal Exchange Ltd. (LME) cash price of zinc for December increased to \$4,404.51 per metric ton, 0.5% higher than the price in November and a 142% increase compared with the price in December 2005. During December 2006, global LME zinc stocks rose by 4,675 t to 90,475 t.

U.S. zinc consumption declined over the latter half of 2006 owing to a slowdown of the U.S. construction sector and vehicle manufacturing industry. In 2006, U.S. vehicle production decreased 6.1% from that of 2005 to 11.2 million units, its lowest level since 1993 (CRU International Limited, 2007). Furthermore, U.S. and Canadian integrated steel mills have decreased crude steel output since mid-October, another indication of reduced zinc demand. According to the American Iron and Steel Institute, U.S. crude steel production fell to a weekly low for the year in late November (Burger, 2006).

N.v. Umicore s.a. (Belgium) and Zinifex Limited (Australia) reportedly signed a Memorandum of Understanding to combine their zinc smelting and alloying businesses. Their joined entities would produce 1.2 million metric tons per year of zinc and zinc alloys resulting in the creation of the world's leading zinc metal producer. According to the Chief Executive Officers of Umicore and Zinifex, the new company would allow Umicore to shift its focus more towards its materials technology business, while expanding and diversifying Zinifex's refining and smelting business. In the United States, Zinifex owns the Clarksville zinc smelter located in Tennessee. A binding business agreement is scheduled to be signed in the first quarter 2007, and the new company is expected to be formed by the third quarter 2007 (Zinifex Limited, 2006).

The Defense National Stockpile Center aggregated cash disposal (sale) of zinc in December, under the monthly basic Ordering Agreement DLA-Zinc-004, was approximately 64 t (70 short tons), with an approximate value of \$275,000 (Defense National Stockpile Center, 2007).

## References Cited

- Burger, J.R., 2006, Reduced US zinc demand increases metal availability: Platts Metals Week, December 4, v. 77, no. 49, p. 2.
- CRU International Limited, 2007, Zinc: CRU Monitor, January, p. 4.
- Defense National Stockpile Center, 2007, (Revised) Stockpile announces BOA sales for December 2006: Fort Belvoir, VA, Defense National Stockpile Center news release, January 8, 1 p.
- Zinifex Limited, 2006, Zinifex and Umicore seek to create the world's leading producer of zinc metal: Zinifex Limited press release, December 12, 2 p.

TABLE 1  
SALIENT ZINC STATISTICS<sup>1</sup>

(Metric tons, unless otherwise specified)

	2005	2006			
	January- December	October	November	December	January- December
<b>Production:</b>					
Mine, zinc content of concentrate	748,000	67,500 <sup>r</sup>	53,500 <sup>r</sup>	49,200	723,000
Mine, recoverable zinc	720,000	65,100	51,500 <sup>r</sup>	47,400	696,000
Smelter, refined zinc <sup>2</sup>	259,000	23,800 <sup>e</sup>	19,000 <sup>e</sup>	20,200 <sup>e</sup>	248,000 <sup>e</sup>
<b>Consumption:</b>					
Refined zinc, reported	405,000	32,800	32,000 <sup>r</sup>	32,400	404,000
Ores <sup>e</sup> (zinc content)	727	61	61	61	732
Zinc-base scrap <sup>e</sup> (zinc content)	191,000	15,900	15,900	15,900	191,000
Copper-base scrap <sup>e</sup> (zinc content)	176,000	14,700	14,700	14,700	176,000
Aluminum-and magnesium-base scrap <sup>e</sup> (zinc content)	1,430	120	120	120	1,440
Total <sup>e</sup>	774,000	63,600	62,700 <sup>r</sup>	63,100	773,000 <sup>*</sup>
Apparent consumption, metal <sup>3</sup>	939,000	117,000 <sup>r</sup>	85,800 <sup>r</sup>	80,600 <sup>4</sup>	1,130,000
<b>Stocks of refined (slab) zinc, end of period:</b>					
Producer <sup>5</sup>	XX	7,160 <sup>e</sup>	6,750 <sup>e</sup>	7,660 <sup>e</sup>	XX
Consumer <sup>6</sup>	XX	49,700	50,300	56,300	XX
Merchant	XX	10,400	10,400	10,200	XX
Total	XX	67,200	67,400	74,200	XX
Shipments of zinc metal from Government stockpile	26,800	1,900	NA <sup>7</sup>	237	33,000
<b>Imports for consumption:</b>					
Refined (slab) zinc	668,000	92,000	67,400	NA	792,000 <sup>8</sup>
Oxide (gross weight)	109,000	14,000	8,740	NA	120,000 <sup>8</sup>
Ore and concentrate (zinc content)	156,000	4,630	100,000	NA	320,000 <sup>8</sup>
<b>Exports:</b>					
Refined (slab) zinc	784	189	363	NA	1,860 <sup>8</sup>
Oxide (gross weight)	14,600	2,490	2,300	NA	26,100 <sup>8</sup>
Ore and concentrate (zinc content)	786,000	225,000	20,600	NA	800,000 <sup>8</sup>
Waste and scrap (gross weight)	56,000	10,400	7,930	NA	76,400 <sup>8</sup>
<b>Price:</b>					
London Metal Exchange, average, dollars per metric ton	1,381.37	3,822.07	4,381.27	4,404.51	3,274.42
Platts Metals Week North American Special High Grade, average, cents per pound	67.14	186.07	210.78	211.83	158.88

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available. XX Not applicable.

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

<sup>2</sup>Includes zinc metal used to manufacture zinc oxide.

<sup>3</sup>Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

<sup>4</sup>Data based on reported consumption, stocks, and estimated trade data.

<sup>5</sup>Data from U.S. Geological Survey and American Bureau of Metal Statistics.

<sup>6</sup>Includes an estimate for companies that report annually.

<sup>7</sup>Monthly shipments are not reflected by changes in inventory due to an inventory adjustment or shipment delay.

<sup>8</sup>Includes data through November.

\*Correction posted April 16, 2007.

TABLE 2  
REFINED ZINC PRODUCED IN THE UNITED STATES<sup>1,2</sup>

(Metric tons)

Month	Beginning stocks <sup>3</sup>	Production	Shipments	Ending stocks <sup>3</sup>
2005:				
December	4,040	23,700	22,200	5,590
January-December	XX	259,000	258,000	XX
2006:				
January	5,590	21,200 <sup>e</sup>	20,100 <sup>e</sup>	6,750
February	6,750	19,000 <sup>e</sup>	20,200 <sup>e</sup>	5,530
March	5,530	22,100 <sup>e</sup>	21,100 <sup>e</sup>	6,580
April	6,580	19,300 <sup>e</sup>	18,800 <sup>e</sup>	7,150
May	7,150	19,100 <sup>e</sup>	19,900 <sup>e</sup>	6,300
June	6,300	19,200 <sup>e</sup>	19,000 <sup>e</sup>	6,510
July	6,510	22,100 <sup>e</sup>	22,300 <sup>e</sup>	6,340
August	6,340	19,200 <sup>e</sup>	19,100 <sup>e</sup>	6,450
September	6,450	24,100 <sup>e</sup>	23,400 <sup>e</sup>	7,110
October	7,110	23,800 <sup>e</sup>	23,700 <sup>e</sup>	7,160
November	7,160	19,000 <sup>e</sup>	19,500 <sup>e</sup>	6,750
December	6,750	20,200 <sup>e</sup>	19,300 <sup>e</sup>	7,660
January-December	XX	248,000 <sup>e</sup>	246,000 <sup>e</sup>	XX

<sup>e</sup>Estimated. XX Not applicable.

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

<sup>2</sup>Includes zinc metal used to manufacture zinc oxide.

<sup>3</sup>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<sup>1</sup>

(Metric tons)

Industry and product	2005	2006			
	January- December	October <sup>f</sup>	November <sup>f</sup>	December <sup>2</sup>	January- December
Galvanizing:					
Sheet and strip	392,000	47,900	35,500	33,900	470,000
Other	121,000	18,300	12,000	10,800	162,000
Total	513,000	66,100	47,500	44,700	631,000
Brass and bronze	147,000	18,100	12,700	11,700	175,000
Zinc-base alloy	203,000	24,600	18,700	17,600	241,000
Other uses <sup>3</sup>	76,900	8,400	6,900	6,500	83,000 *
Grand total	939,000	117,000	85,800	80,600	1,130,000 *

<sup>f</sup>Revised.

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

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

<sup>3</sup>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.

\*Corrections posted April 16, 2007.

TABLE 4  
AVERAGE ZINC PRICES<sup>1</sup>

Period	North American	LME <sup>2</sup> cash	
	¢/lb.	¢/lb.	\$/t
2005:			
November	78.47	73.06	1,610.61
December	88.01	82.62	1,821.44
January-December	67.14	62.66	1,381.37
2006:			
January	100.96	94.80	2,089.92
February	106.84	100.65	2,218.90
March	116.80	109.61	2,416.44
April	148.56	139.88	3,083.75
May	172.59	161.68	3,564.51
June	157.93	146.27	3,224.66
July	163.73	151.45	3,338.80
August	163.83	151.77	3,346.00
September	166.60	154.32	3,402.25
October	186.07	173.37	3,822.07
November	210.78	198.73	4,381.27
December	211.83	199.79	4,404.51
January-December	158.88	148.53	3,274.42

<sup>1</sup>Special High Grade.

<sup>2</sup>London Metal Exchange.

Source: Platts Metals Week.

TABLE 5  
U.S. EXPORTS OF ZINC<sup>1</sup>

Material	2005		2006 <sup>2</sup>			
	Quantity (metric tons)	Value (thousands)	November		Year to date	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	784	\$1,500	363	\$519	1,860	\$3,090
Ore and concentrate (zinc content)	786,000	477,000	20,600	19,800	800,000	1,010,000
Waste and scrap (gross weight)	56,000	62,000	7,930	8,030	76,400	91,000
Powders, flakes, dust (zinc content)	9,310	18,500	1,900	3,760	15,100	30,600
Oxide (gross weight)	14,600	23,600	2,300	4,740	26,100	42,500
Chloride (gross weight)	1,860	2,310	217	243	1,410	1,720
Sulfate (gross weight)	2,820	1,870	8,360	3,080	42,400	22,300
Compounds, other (gross weight)	1,130	887	36	111	687	2,130

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

<sup>2</sup>Data for December 2006 were not available at time of publication.

Source: U.S. Census Bureau.

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

Material	2005		2006 <sup>2</sup>			
	Quantity (metric tons)	Value (thousands)	November		Year to date	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	668,000	\$875,000	67,400	\$227,000	792,000	\$1,840,000
Ore and concentrate (zinc content)	156,000	117,000	100,000	24,800	320,000	166,000
Waste and scrap (gross weight)	9,580	8,820	1,210	1,830	12,600	16,200
Powders, flakes, dust (zinc content)	23,400	46,000	2,400	10,300	27,700	96,600
Oxide (gross weight)	109,000	127,000	8,740	22,100	120,000	228,000
Chloride (gross weight)	723	1,250	76	83	1,130	1,630
Sulfate (gross weight)	31,100	16,600	2,710	2,640	41,300	30,300
Compounds, other (gross weight)	7,010	6,370	310	353	4,770	3,740

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

<sup>2</sup>Data for December 2006 were not available at time of publication.

Source: U.S. Census Bureau.

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

(Metric tons)

Period	Shipments	Ending inventory <sup>2</sup>
2005:		
November	2,280	50,100
December	5,040	45,100
January-December	26,800	XX
2006:		
January	NA <sup>3</sup>	46,200
February	4,590	41,600
March	4,500	37,100
April	3,590	33,500
May	4,640	28,800
June	3,380	25,500
July	994	24,500
August	3,690	20,800
September	5,460	15,300
October	1,900	13,400
November	NA <sup>3</sup>	15,500
December	237	15,300
January-December	33,000	XX

NA Not available. XX Not applicable.

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

<sup>2</sup>Includes excess material and material committed for  
sale/pending shipment.

<sup>3</sup>Monthly shipments are not reflected by changes in  
inventory due to an inventory adjustment or shipment delay.

Source: Defense National Stockpile Center.

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

(Metric tons)

Material and country	General imports			Imports for consumption		
	2005	2006		2005	2006	
		November	Year to date		November	Year to date
<b>Ore and concentrate (zinc content):</b>						
Australia	8,590	--	2,850	8,590	--	2,850
Ireland	13,000	--	17,000	13,000	--	17,000
Mexico	27,300	71	55,600	27,300	71	55,600
Peru	104,000	100,000	241,000	104,000	100,000	241,000
Other	2,900	--	2,750	2,900	--	2,750
<b>Total</b>	<b>156,000</b>	<b>100,000</b>	<b>320,000</b>	<b>156,000</b>	<b>100,000</b>	<b>320,000</b>
<b>Blocks, pigs, or slab:</b>						
Australia	1	5,040	15,000	24,600	5,040	47,100
Brazil	43,700	--	8,130	43,800	--	12,400
Canada	439,000	44,500	492,000	439,000	44,500	492,000
China	15	2,000	2,000	2,140	3,810	55,800
India	--	3,110	10,100	--	3,110	10,100
Japan	--	--	251	1,210	49	6,200
Korea, Republic of	5,030	--	--	8,710	2,020	65,300
Mexico	147,000	8,600	92,300	147,000	8,600	92,600
Norway	--	--	--	--	--	1,160
Peru	235	269	832	834	269	1,110
Other	1,260	--	6,020	1,480	--	7,790
<b>Total</b>	<b>636,000</b>	<b>63,500</b>	<b>627,000</b>	<b>668,000</b>	<b>67,400</b>	<b>792,000</b>
<b>Dross, ashes, fume (zinc content)</b>	<b>15,800</b>	<b>2,010</b>	<b>29,700</b>	<b>15,800</b>	<b>2,010</b>	<b>29,700</b>
<b>Grand total</b>	<b>807,000</b>	<b>166,000</b>	<b>976,000</b>	<b>840,000</b>	<b>170,000</b>	<b>1,140,000</b>
<b>Oxide (gross weight):</b>						
Canada	62,000	4,050	46,700	62,000	4,050	46,700
China	173	18	215	173	18	215
Italy	15,400	40	24,500	15,400	40	24,500
Japan	1,080	107	1,150	1,080	107	1,150
Mexico	24,100	3,590	29,500	24,100	3,590	29,500
Netherlands	4,450	691	7,700	4,450	691	7,700
Other	2,040	251	9,940	2,040	251	9,940
<b>Total</b>	<b>109,000</b>	<b>8,740</b>	<b>120,000</b>	<b>109,000</b>	<b>8,740</b>	<b>120,000</b>
<b>Other (gross weight):</b>						
Waste and scrap	9,580	1,210	12,600	9,580	1,210	12,600
Sheets	3,630	39	1,940	3,630	39	1,940
<b>Powders, flakes, dust (zinc content)</b>	<b>23,400</b>	<b>2,400</b>	<b>27,700</b>	<b>23,400</b>	<b>2,400</b>	<b>27,700</b>

-- Zero.

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

<sup>2</sup>Data for December 2006 were not available at time of publication.

Source: U.S. Census Bureau.