

# Mineral Industry Surveys

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## ZINC IN MARCH 2023

Domestic mine production (recoverable) of zinc in March 2023 was 57,600 metric tons (t) (tables 1, 2). Average daily (recoverable) mine production in March was 1,860 t, 4% less than the amount in the previous month and 17% less than that in March 2022 (fig. 1, table 2).

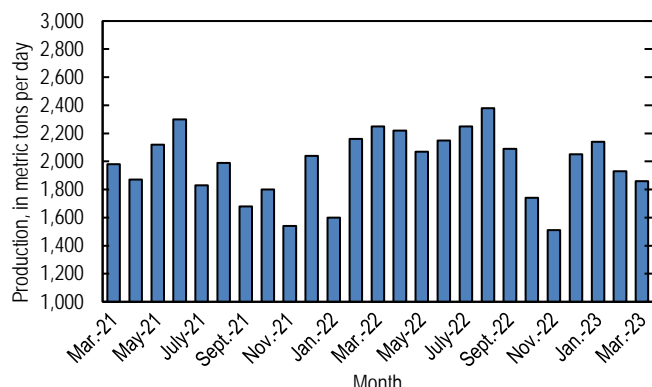


Figure 1. Average daily domestic zinc mine production (recoverable) from March 2021 through March 2023.

## Stocks and Prices

There were no London Metal Exchange Ltd. (LME) stocks of Special High Grade (SHG) zinc held in U.S. warehouses at the end of March 2023, unchanged since the end of January 2023 and down from 25,350 t at the end of March 2022. Global LME stocks were 45,050 t at the end of March 2023, 36% more compared with stocks at the end of February 2023 but 68% less than 139,950 t at the end of March 2022 (fig. 2, table 9). Reported off-warrant stocks of SHG zinc in LME-approved warehouses at the end of March 2023 decreased to 13,982 t from 18,522 t at the end of February 2023; all of which were held in Asia (London Metal Exchange Ltd., 2023).

The monthly average S&P Global Platts Metals Week North American SHG zinc price in March 2023 was 170 cents per pound, 5% less than that in the previous month and 17% less than that in March 2022. The March 2023 average LME cash price for SHG zinc was \$2,955.59 per metric ton (134 cents per pound), 6% less than that in the previous month and 26% less than that in March 2022 (fig. 3, table 8).

The North American premium to the LME cash price in March 2023 averaged 36 cents per pound, 3% less than that in the previous month but 41% more than that in March 2022 (fig. 3, table 8).

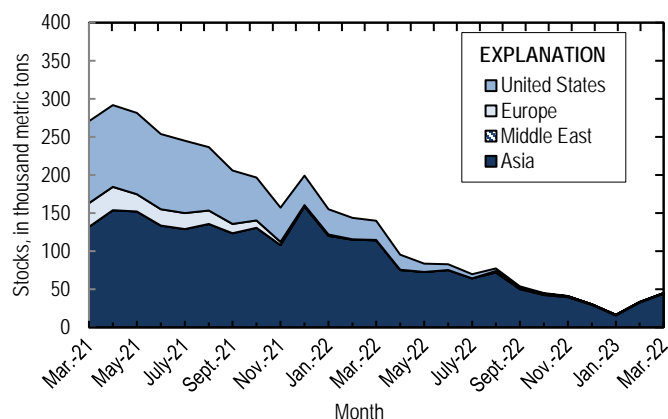


Figure 2. Global LME stocks of Special High Grade zinc, end of month, from March 2021 through March 2023. Source: London Metal Exchange Ltd.

## News

Nevada Zinc Corp. (Canada) announced that it achieved continuous production of commercial-grade zinc sulfate at a pilot plant that was part of the company's Lone Mountain Zinc Project. The pilot plant processed material mined from its Lone Mountain zinc carbonate-oxide deposit in northern Nevada. The company was in the process of completing an economic evaluation of a commercial-scale plant that could process 500 metric tons per day of ore (Nevada Zinc Corp., 2023). Zinc sulfate is about 35% zinc and is commonly added to animal feeds and fertilizers to correct or prevent zinc deficiency.

## References Cited

- London Metal Exchange Ltd., 2023, Off-warrant stock reporting: London, United Kingdom, London Metal Exchange Ltd. (Accessed May 16, 2023, via <https://www.lme.com/en/Market-data/Reports-and-data/Warehouse-and-stocks-reports/Off-warrant-stock-reporting>.)
- Nevada Zinc Corp., 2023, Nevada Zinc's pilot plant project produces high-grade zinc sulfate: Toronto, Ontario, Canada, Nevada Zinc Corp. news release, March 29. (Accessed May 16, 2023, at

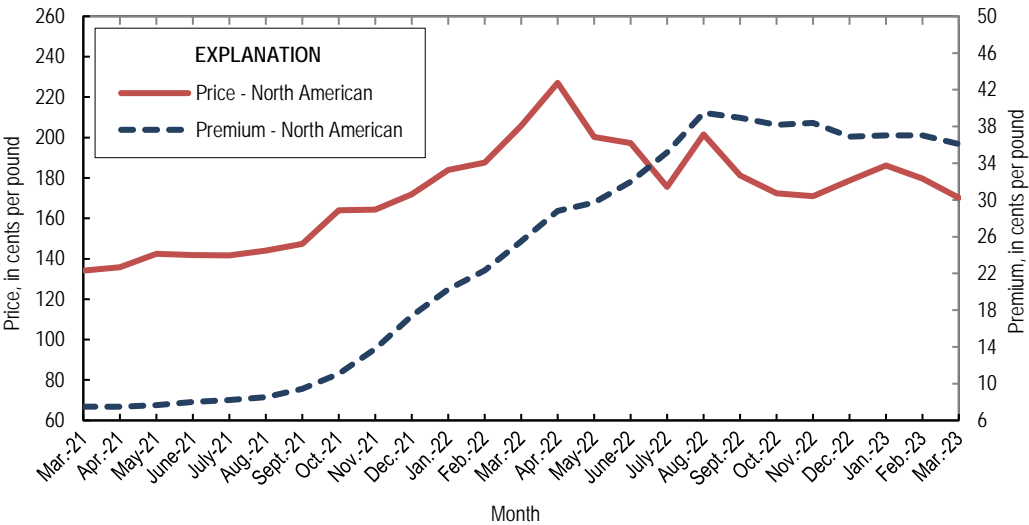


Figure 3. Average monthly North American price and premium for Special High Grade zinc from March 2021 through March 2023. The North American price is based on the London Metal Exchange cash price plus the North American premium. Source: S&P Global Platts Metals Week.

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

(Metric tons, unless otherwise specified)

	2022	2023		
	January– December <sup>p</sup>	February	March	January– March <sup>2</sup>
Production:				
Mine, zinc content of concentrate <sup>3</sup>	761,000	55,300	58,900	182,000
Mine, recoverable zinc <sup>3</sup>	744,000	54,100	57,600	178,000
Smelter, refined zinc <sup>e, 4</sup>	220,000	18,000	18,000	54,000
Consumption of refined zinc, apparent <sup>5</sup>	973,000	92,500	87,500	297,000
Imports for consumption:				
Ore and concentrate (zinc content)	4,870	306	588	10,800
Refined zinc	762,000	74,900	69,600	244,000
Exports:				
Ore and concentrate (zinc content)	644,000	4,790	18,900	29,700
Refined zinc	8,630	403	82	782
Price: <sup>6</sup>				
London Metal Exchange cash, average, dollars per metric ton	3,484.42	3,143.04	2,955.59	3,129.06
North American, <sup>7</sup> average, cents per pound	190.19	179.60	170.16	178.65

<sup>e</sup>Estimated. <sup>p</sup>Preliminary.

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

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Reported zinc content in both zinc and lead concentrates.

<sup>4</sup>Monthly and annual smelter production data are estimated to avoid disclosing company proprietary data and do not reflect actual production reported to the U.S. Geological Survey.

<sup>5</sup>Smelter production plus imports for consumption minus domestic exports. Apparent consumption may not reflect actual consumption owing to significant changes in unreported stocks.

<sup>6</sup>Special High Grade Zinc.

<sup>7</sup>S&P Global Platts Metals Week.

TABLE 2  
MINE AND SMELTER PRODUCTION OF ZINC  
IN THE UNITED STATES<sup>1</sup>

(Metric tons)

Period	Mine <sup>2</sup>		Smelter <sup>e, 3</sup>
	Zinc content	Recoverable	
2022:			
March	71,200	69,700	18,000
April	68,200	66,700	18,000
May	65,500	64,100	18,000
June	65,900	64,400	18,000
July	71,500	69,900	18,000
August	75,400	73,800	18,000
September	64,100	62,700	18,000
October	55,300	54,000	18,000
November	46,400	45,400	18,000
December	64,900	63,500	18,000
January–December	761,000	744,000	220,000
2023:			
January	67,700	66,200	18,000
February	55,300	54,100	18,000
March	58,900	57,600	18,000
January–March	182,000	178,000	54,000

<sup>e</sup>Estimated.

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

<sup>2</sup>Includes the zinc content in both lead and zinc concentrates.

<sup>3</sup>Monthly and annual smelter production data are estimated to avoid disclosing company proprietary data and do not reflect actual production reported to the U.S. Geological

TABLE 3  
U.S. SHIPMENTS OF  
GALVANIZED STEEL SHEET AND STRIP<sup>1</sup>

Period	Quantity (metric tons)
2022:	
March	1,460,000
April	1,460,000
May	1,440,000
June	1,360,000
July	1,320,000
August	1,370,000
September	1,310,000
October	1,350,000
November	1,320,000
December	1,250,000
January–March	4,160,000
January–December	16,300,000
2023:	
January	1,290,000
February	1,280,000
March	1,380,000
January–March	3,940,000

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

Source: American Iron and Steel Institute.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF ZINC<sup>1</sup>

(Gross weight, unless otherwise specified)

Material	2022		2023			
	Quantity (metric tons)	Value (thousands)	March		January–March <sup>2</sup>	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Ore and concentrate (zinc content)	4,870	\$9,880	588	\$793	10,800	\$12,000
Unwrought:						
Refined zinc	762,000	2,720,000	69,600	248,000	244,000	848,000
Zinc alloys	3,770	15,200	585	1,910	1,260	4,780
Wrought:						
Bars, rods, profiles, wire	3,520	16,300	287	1,360	834	3,710
Plates, sheets, strip, foil	1,680	9,840	172	1,090	329	2,020
Ash and residues: <sup>3</sup>						
Hard zinc spelter	--	--	--	--	--	--
Zinc dross and skimmings	4,370	8,550	279	692	1,620	4,100
Other (zinc content)	5,610	12,000	37	25	1,000	584
Other:						
Powders, flakes, dust	19,800	92,600	1,820	8,600	4,810	22,300
Waste and scrap	10,900	23,300	1,440	3,170	3,150	6,780
Chemicals:						
Lithopone	1,110	4,520	16	48	43	99
Zinc chloride	453	2,990	23	134	161	809
Zinc oxide	104,000	373,000	9,210	31,400	26,300	89,500
Zinc sulfate	95,100	123,000	5,590	6,110	17,500	17,200
Zinc sulfide	1,930	9,710	100	1,000	479	2,490

-- Zero.

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

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Other than from the manufacture of iron and steel; containing mainly zinc.

Source: U.S. Census Bureau.

TABLE 5  
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY OR LOCALITY<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

Material and country or locality	General imports			Imports for consumption		
	2022	2023		2022	2023	
		March	January–March <sup>2</sup>		March	January–March <sup>2</sup>
Ore and concentrate (zinc content):						
Canada	1,610	--	--	1,610	--	--
China	358	--	--	358	--	--
El Salvador	--	--	8	--	--	8
Korea, Republic of	--	588	893	--	588	893
Peru	2,670	--	--	2,670	--	--
Turkey	--	--	9,950	--	--	9,950
Other	231	(3)	(3)	231	(3)	(3)
Total	4,870	588	10,800	4,870	588	10,800
Refined zinc:						
Australia	69,000	301	27,600	74,000	301	27,600
Belgium	--	--	--	1,800	--	--
Brazil	--	2,110	7,410	10	2,110	7,410
Bulgaria	--	--	43	--	--	43
Canada	378,000	31,200	80,000	378,000	31,200	80,000
China	(3)	500	1,770	502	500	1,770
Denmark	(3)	--	--	(3)	--	--
Germany	983	--	--	983	--	--
India	--	496	2,520	--	496	2,520
Italy	3	--	1	3	--	1
Japan	2	(3)	1,090	2	(3)	1,090
Kazakhstan	17,700	14,900	24,400	17,700	14,900	24,400
Korea, Republic of	88,600	300	41,300	94,000	300	41,300
Mexico	108,000	9,060	28,000	108,000	9,060	28,000
Netherlands	--	--	--	1,240	--	--
Nigeria	320	--	--	320	--	--
Peru	52,900	9,180	28,100	52,900	9,180	28,100
Poland	241	--	--	241	--	--
Singapore	21	--	25	21	--	25
Spain	5,500	--	--	31,600	--	--
Taiwan	21	--	--	21	--	--
Thailand	(3)	--	--	(3)	--	--
United Kingdom	20	1,640	1,640	20	1,640	1,640
Total	722,000	69,600	244,000	762,000	69,600	244,000
Oxide:						
Australia	197	--	126	148	--	151
Canada	44,200	3,260	9,470	44,200	3,260	9,470
China	820	34	55	820	34	55
Germany	1,870	21	216	1,870	21	216
Greece	375	51	103	375	51	103
Japan	1,250	41	173	1,250	41	173
Korea, Republic of	428	68	107	428	68	107
Mexico	41,300	4,780	14,000	41,300	4,780	14,000
Netherlands	6,900	491	879	6,900	491	879
Peru	5,830	447	1,070	5,830	447	1,070
Other	494	25	34	494	25	34
Total	104,000	9,210	26,200	104,000	9,210	26,300

-- Zero.

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

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6  
U.S. EXPORTS OF ZINC<sup>1</sup>

(Gross weight, unless otherwise specified)

Material	2022		2023			
	Quantity (metric tons)	Value (thousands)	March		January–March <sup>2</sup>	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Ore and concentrate (zinc content)	644,000	\$1,540,000	18,900	\$28,400	29,700	\$44,200
Unwrought:						
Refined zinc	8,630	27,000	82	388	782	3,060
Zinc alloys	44,300	124,000	3,910	12,000	10,300	30,500
Wrought:						
Bars, rods, profiles, wire	3,220	21,200	130	786	734	3,300
Plates, sheets, strip, foil	5,840	24,900	312	1,300	1,020	4,080
Ash and residues: <sup>3</sup>						
Hard zinc spelter	12,300	29,100	479	878	2,230	4,490
Other (zinc content)	26,900	52,900	2,020	4,190	4,830	8,960
Other:						
Powders, flakes, dust	10,600	51,600	636	3,490	1,890	9,650
Waste and scrap	190,000	183,000	4,210	4,740	13,000	15,500
Chemicals:						
Lithopone	510	1,900	55	176	129	370
Zinc chloride	1,250	1,550	152	187	413	701
Zinc oxide	71,400	137,000	7,920	13,100	22,300	37,000
Zinc sulfate	805	764	30	35	82	78
Zinc sulfide	2,400	14,500	231	1,190	649	3,760

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

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Other than from the manufacture of iron and steel; containing mainly zinc.

Source: U.S. Census Bureau.



TABLE 7  
U.S. EXPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY OR LOCALITY<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

Material and country or locality	2022	2023	
		March	January–March <sup>2</sup>
Ore and concentrate (zinc content):			
Australia	19,300	--	--
Belgium	45,200	3,230	3,230
Canada	241,000	8,940	19,600
China	49,400	--	--
Finland	23,300	--	--
Japan	63,400	--	69
Korea, Republic of	119,000	6,690	6,740
Netherlands	3,080	--	--
Spain	79,500	--	--
Other	43	--	5
Total	644,000	18,900	29,700
Refined zinc:			
Belgium	760	--	--
Canada	1,440	68	245
Italy	3,050	(3)	(3)
Mexico	2,840	6	524
Spain	250	--	--
Other	293	8	13
Total	8,630	82	782
Oxide:			
Australia	187	(3)	26
Belgium	431	15	55
Brazil	285	38	106
Canada	3,710	47	294
Colombia	275	71	81
Finland	797	14	215
India	828	167	382
Italy	108	--	173
Mexico	63,500	7,370	20,500
Poland	147	10	50
Other	1,110	191	458
Total	71,400	7,920	22,300

-- Zero.

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

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8  
AVERAGE PRICES FOR SPECIAL HIGH GRADE ZINC

Period	North American		London Metal Exchange	
	Premium	Price <sup>1</sup>	cash <sup>2</sup>	
	¢/lb.	¢/lb.	¢/lb.	\$/t
2022:				
March	25.5	205.75	180.24	3,973.62
April	28.8	227.06	198.24	4,370.41
May	29.7	200.19	170.50	3,758.77
June	32.0	197.24	165.26	3,643.29
July	35.2	175.63	140.46	3,096.58
August	39.5	201.52	162.03	3,572.13
September	39.0	181.18	142.23	3,135.72
October	38.2	172.40	134.22	2,959.05
November	38.4	170.98	132.58	2,922.97
December	36.9	178.75	141.86	3,127.50
January–December	32.1	190.19	158.05	3,484.42
2023:				
January	37.0	186.20	149.17	3,288.55
February	37.0	179.60	142.57	3,143.04
March	36.1	170.16	134.06	2,955.59
January–March	36.7	178.65	141.93	3,129.06

<sup>1</sup> S&P Global Platts Metals Week North American price. Based on the London Metal Exchange cash price plus the North American premium.

<sup>2</sup> Average of the cash buyer price and the cash seller and settlement price.

Source: S&P Global Platts Metals Week.

TABLE 9  
LONDON METAL EXCHANGE (LME) STOCKS OF SPECIAL HIGH GRADE ZINC, END OF PERIOD

(Metric tons)

Period	United States			Asia	Europe	Middle East	Total LME
	Baltimore, MD	New Orleans, LA	Total				
2022:							
March	4,425	20,925	25,350	114,100	500	--	139,950
April	3,700	15,900	19,600	75,375	375	--	95,350
May	1,800	8,875	10,675	72,875	25	--	83,575
June	1,650	6,075	7,725	75,050	25	--	82,800
July	1,300	3,950	5,250	64,450	25	--	69,725
August	1,000	2,150	3,150	72,025	25	1,950	77,150
September	975	750	1,725	49,925	25	1,950	53,625
October	650	--	650	42,450	25	1,700	44,825
November	350	--	350	39,550	25	1,300	41,225
December	25	--	25	29,425	25	1,000	30,475
2023:							
January	--	--	--	15,475	--	1,000	16,475
February	--	--	--	32,225	--	1,000	33,225
March	--	--	--	44,300	--	750	45,050
-- Zero.							

-- Zero.

Source: London Metal Exchange, Ltd.