

# Mineral Industry Surveys

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## ZINC IN DECEMBER 2023

Mine production (recoverable) in 2023 was 753,000 t, essentially unchanged compared with that in 2022. Domestic mine production (recoverable) of zinc in December 2023 was 79,700 metric tons (t) (tables 1, 2). Average daily (recoverable) mine production in December was 2,570 t, 40% more than the amount in the previous month and 24% more compared with that in December 2022 (fig. 1, table 2).

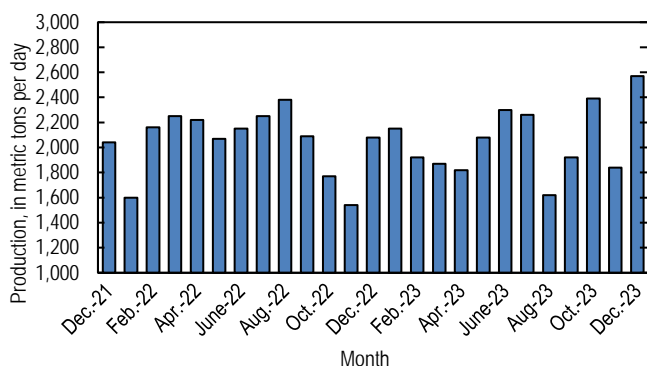


Figure 1. Average daily domestic zinc mine production (recoverable) from December 2021 through December 2023.

## Stocks and Prices

There were no London Metal Exchange Ltd. (LME) stocks of Special High Grade (SHG) zinc held in U.S. warehouses at yearend 2023, unchanged since the end of January 2023 and down from 25 t at yearend 2022. Global LME stocks were 223,225 t at yearend 2023, unchanged from November 2023 and 7.3 times more than stocks at yearend 2022. Almost all LME stocks of zinc were held in Asia (fig. 2, table 9). Reported off-warrant stocks of SHG zinc in LME-approved warehouses at the end of December 2023 increased to 35,679 t from 24,017 t at the end of November 2023; of which 98% were held in Asia and 2% in Europe (London Metal Exchange Ltd., 2024).

The 2023 average S&P Global Platts Metals Week North American SHG zinc price was 151.26 cents per pound, 20% less than that in 2022. The monthly average North American price in December 2023 was 135.42 cents per pound, 4% less compared with that in the previous month and 24% less than that in December 2022. The 2023 average LME cash price for SHG

zinc was \$2,648.46 per metric ton, 24% less than the 2022 average price. The monthly average LME cash price in December 2023 was \$2,501.29 per metric ton (113.46 cents per pound), slightly less than that in the previous month and 20% less than that in December 2022 (fig. 3, table 8).

The 2023 average North American premium to the LME cash price was 31.1 cents per pound, 3% less than that in 2022. The North American premium in December 2023 averaged 22.0 cents per pound, 13% less than that in the previous month and 40% less compared with that in December 2022. (fig. 3, table 8).

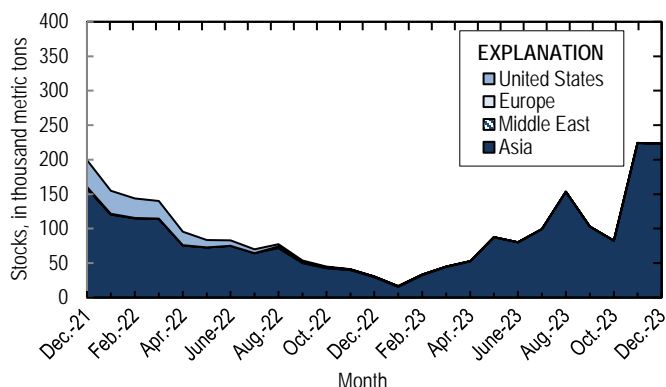


Figure 2. Global LME stocks of Special High Grade zinc, end of month, from December 2021 through December 2023. Source: London Metal Exchange Ltd.

## Government and Legislative Programs

The U.S. Department of the Treasury's Office of Foreign Assets Control sanctioned JSC Ozernaya Mining Company by adding the company to its Specially Designated Nationals and Blocked Persons List (U.S. Department of the Treasury, Office of Foreign Assets Control, 2023). The company was developing the Ozernoye zinc-lead mine project in Siberia, Russia.

## World News

The Myra Falls zinc-lead mine in British Columbia, Canada, owned by Trafigura Group Pte Ltd. (Singapore), was placed on care-and-maintenance status on December 18 owing to increased operating costs and decreasing zinc prices (Myra Falls Mine Ltd., 2023).

The Government of Australia created a new Strategic Materials List, which included zinc. Strategic materials were defined as minerals with supply chains not vulnerable enough to be considered critical minerals, but were needed for the energy transition to net zero emissions, have applications related to the country’s critical minerals strategy, and were minerals for which Australia has resource potential and were in demand with international partners. The list signaled Government support for the development of the selected minerals (Department of Industry, Science and Resources, 2023).

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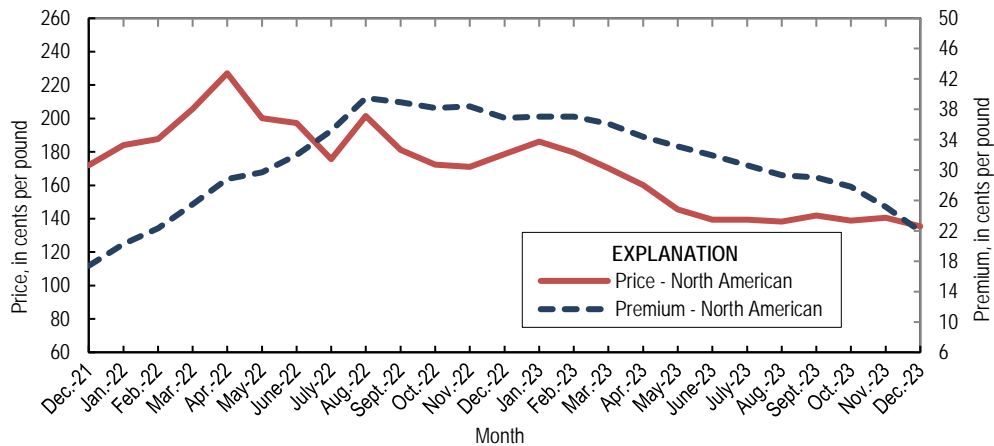


Figure 3. Average monthly North American price and premium for Special High Grade zinc from December 2021 through December 2023. The North American price is based on the London Metal Exchange cash price plus the North American premium. Source: S&P Global Platts Metals Week.

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

(Metric tons, unless otherwise specified)

	2022	2023		
	January– December <sup>p</sup>	November	December	January– December <sup>2</sup>
Production:				
Mine, zinc content of concentrate <sup>3</sup>	766,000	56,400	81,400	771,000
Mine, recoverable zinc <sup>3</sup>	747,000	55,100	79,700	753,000
Smelter, refined zinc <sup>e,4</sup>	220,000	18,000	18,000	220,000
Consumption of refined zinc, apparent <sup>5</sup>	974,000	60,800	64,000	911,000
Imports for consumption:				
Ore and concentrate (zinc content)	4,870	308	2,410	18,400
Refined zinc	762,000	42,900	46,200	695,000
Exports:				
Ore and concentrate (zinc content)	644,000	33,200	12,500	637,000
Refined zinc	8,070	114	123	4,040
Price: <sup>6</sup>				
London Metal Exchange cash, average, dollars per metric ton	3,484.42	2,543.25	2,501.29	2,648.46
North American, <sup>7</sup> average, cents per pound	190.19	140.52	135.42	151.26

<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:			
December	65,800	64,400	18,000
January–December	766,000	747,000	220,000
2023:			
January	68,300	66,800	18,000
February	55,200	53,900	18,000
March	59,500	58,100	18,000
April	55,900	54,600	18,000
May	65,900	64,500	18,000
June	70,700	69,100	18,000
July	72,000	69,900	18,000
August	51,300	50,100	18,000
September	58,900	57,500	18,000
October	75,700	74,000	18,000
November	56,400	55,100	18,000
December	81,400	79,700	18,000
January–December	771,000	753,000	220,000

<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 Survey.

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

Period	Quantity (metric tons)
2022:	
December	1,250,000
January–December	16,300,000
2023:	
January	1,420,000
February	1,390,000
March	1,510,000
April	1,410,000
May	1,440,000
June	1,410,000
July	1,360,000
August	1,410,000
September	1,280,000
October	1,330,000
November	1,290,000
December	1,310,000
January–December	16,500,000

<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)	December		January–December <sup>2</sup>	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Ore and concentrate (zinc content)	4,870	\$9,880	2,410	\$4,430	18,400	\$21,500
Unwrought:						
Refined zinc	762,000	2,710,000	46,200	137,000	695,000	2,210,000
Zinc alloys	3,770	15,200	493	1,450	5,030	17,100
Wrought:						
Bars, rods, profiles, wire	3,500	16,200	387	1,700	3,990	16,500
Plates, sheets, strip, foil	1,680	9,840	113	479	1,690	9,270
Ash and residues: <sup>3</sup>						
Hard zinc spelter	--	--	--	--	(4)	22
Zinc dross and skimmings	4,370	8,550	349	539	5,710	9,270
Other (zinc content)	5,610	12,000	19	26	1,700	1,260
Other:						
Powders, flakes, dust	19,800	92,600	2,580	10,600	18,600	81,000
Waste and scrap	10,900	23,300	652	1,230	10,800	22,000
Chemicals:						
Lithopone	1,110	4,520	3	10	233	1,050
Zinc chloride	419	2,830	118	470	792	3,920
Zinc oxide	104,000	371,000	7,800	21,800	98,600	311,000
Zinc sulfate	95,200	124,000	7,920	7,090	72,200	66,800
Zinc sulfide	1,930	9,710	40	277	2,170	12,500

-- 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.

<sup>4</sup>Less than ½ unit.

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	
		December	January–December <sup>2</sup>		December	January–December <sup>2</sup>
Ore and concentrate (zinc content):						
Canada	1,610	168	2,230	1,610	168	2,230
China	358	--	--	358	--	--
Korea, Republic of	--	--	3,860	--	--	3,860
Peru	2,670	2,240	2,240	2,670	2,240	2,240
Turkey	--	--	9,950	--	--	9,950
Other	232	--	83	232	--	83
Total	4,870	2,410	18,400	4,870	2,410	18,400
Refined zinc:						
Australia	69,000	--	40,000	74,000	--	40,000
Belgium	--	118	463	1,800	118	463
Brazil	--	2,490	28,900	10	2,490	28,900
Bulgaria	--	--	43	--	--	43
Canada	378,000	31,700	352,000	378,000	31,700	352,000
China	(3)	13	2,090	502	13	2,090
Denmark	(3)	--	--	(3)	--	--
Finland	--	397	1,100	--	397	1,100
Germany	983	--	10	983	--	10
India	--	--	4,950	--	--	4,950
Italy	3	--	27	3	--	27
Japan	2	1	1,790	2	1	1,790
Kazakhstan	17,700	--	39,400	17,700	--	39,400
Korea, Republic of	88,600	1,300	52,100	94,000	1,300	52,100
Luxembourg	--	--	75	--	--	75
Mexico	108,000	6,690	105,000	108,000	6,690	105,000
Netherlands	--	--	--	1,240	--	--
Nigeria	320	--	--	320	--	--
Peru	52,900	3,030	64,200	52,900	3,030	64,200
Poland	241	441	1,220	241	441	1,220
Singapore	21	--	25	21	--	25
Spain	5,500	--	--	31,600	--	--
Taiwan	21	--	9	21	--	9
Thailand	(3)	--	--	(3)	--	--
United Kingdom	20	--	1,640	20	--	1,640
Total	722,000	46,200	695,000	762,000	46,200	695,000
Oxide:						
Canada	44,200	1,940	35,100	44,200	1,940	35,100
China	800	9	196	800	9	180
Germany	1,870	44	748	1,870	44	748
Greece	375	120	989	375	120	989
India	83	24	694	83	24	694
Japan	1,210	44	506	1,210	44	506
Korea, Republic of	428	41	357	428	41	357
Mexico	41,300	4,010	49,300	41,300	4,010	49,300
Netherlands	6,900	1,100	4,260	6,900	1,100	4,260
Peru	5,850	239	5,450	5,850	239	5,450
Other	608	231	970	559	231	995
Total	104,000	7,800	98,600	104,000	7,800	98,600

-- 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)	December		January–December <sup>2</sup>	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Ore and concentrate (zinc content)	644,000	\$1,530,000	12,500	\$23,800	637,000	\$967,000
Unwrought:						
Refined zinc	8,070	28,300	123	474	4,040	13,500
Zinc alloys	44,300	124,000	2,100	7,310	35,100	113,000
Wrought:						
Bars, rods, profiles, wire	3,220	21,200	188	805	2,230	10,500
Plates, sheets, strip, foil	5,830	24,800	581	2,840	5,600	23,700
Ash and residues: <sup>3</sup>						
Hard zinc spelter	12,300	29,300	1,380	2,790	14,700	28,300
Other (zinc content)	26,900	52,900	2,270	3,620	24,900	40,600
Other:						
Powders, flakes, dust	10,600	51,700	653	3,120	7,400	35,800
Waste and scrap	190,000	183,000	2,420	3,270	44,100	52,800
Chemicals:						
Lithopone	510	1,900	29	135	391	1,360
Zinc chloride	1,250	1,550	229	235	1,390	2,190
Zinc oxide	71,300	137,000	5,500	9,060	71,300	108,000
Zinc sulfate	808	769	33	20	508	424
Zinc sulfide	2,400	14,500	79	877	2,030	12,600

<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	
		December	January–December <sup>2</sup>
Ore and concentrate (zinc content):			
Australia	19,300	--	63,500
Belgium	45,200	--	48,700
Canada	241,000	3,960	244,000
China	49,400	--	29,000
Finland	23,300	--	23,900
Japan	63,400	3,480	40,900
Korea, Republic of	120,000	2,280	120,000
Netherlands	3,080	--	--
Spain	79,500	2,790	63,800
Other	43	2	2,840
Total	644,000	12,500	637,000
Refined zinc:			
Belgium	758	--	--
Brazil	--	--	1,880
Canada	1,460	76	839
Italy	2,470	3	12
Mexico	2,840	37	1,270
Other	543	7	47
Total	8,070	123	4,040
Oxide:			
Australia	187	41	124
Belgium	387	360	619
Brazil	285	(3)	143
Canada	3,710	690	3,500
Colombia	275	41	253
Finland	797	99	915
India	828	243	1,350
Japan	38	(3)	390
Mexico	63,500	3,890	62,100
United Kingdom	145	--	268
Other	1,180 <sup>†</sup>	144	1,540
Total	71,300	5,500	71,300

<sup>†</sup>Revised. -- 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:				
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
April	34.4	160.11	125.74	2,772.06
May	33.1	145.49	112.36	2,477.10
June	31.9	139.33	107.39	2,367.64
July	30.7	139.33	108.68	2,395.99
August	29.4	138.23	108.88	2,400.48
September	29.0	141.86	112.84	2,487.75
October	27.8	138.87	111.07	2,448.75
November	25.2	140.52	115.36	2,543.25
December	22.0	135.42	113.46	2,501.29
January–December	31.1	151.26	120.13	2,648.46

<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:							
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
April	--	--	--	52,525	--	400	52,925
May	--	--	--	87,400	--	50	87,450
June	--	--	--	80,225	--	50	80,275
July	--	--	--	99,300	--	50	99,350
August	--	--	--	153,525	--	50	153,575
September	--	--	--	102,725	--	50	102,775
October	--	--	--	82,650	--	50	82,700
November	--	--	--	224,225	--	50	224,275
December	--	--	--	223,175	--	50	223,225

-- Zero.

Source: London Metal Exchange, Ltd.