

# Mineral Industry Surveys

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## ZINC IN JUNE 2023

Domestic mine production (recoverable) of zinc in June 2023 was 69,000 metric tons (t) (tables 1, 2). Mine production (recoverable) for the year through June was 366,000 t, slightly less than that in the same period in 2022. Average daily (recoverable) mine production in June was 2,300 t, 11% more than that in the previous month and 7% more compared with that in June 2022 (fig. 1, table 2).

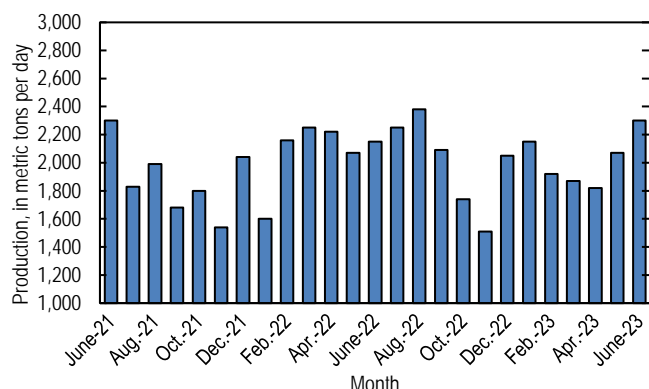


Figure 1. Average daily domestic zinc mine production (recoverable) from June 2021 through June 2023.

## 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 June 2023, unchanged since the end of January 2023 and down from 7,725 t at the end of June 2022. Global LME stocks were 80,275 t at the end of June 2023, 8% less compared with stocks at the end of May 2023 and 3% less than those at the end of June 2022 (fig. 2, table 9). Reported off-warrant stocks of SHG zinc in LME-approved warehouses at the end of June 2023 increased to 12,411 t from 11,366 t at the end of May 2023; of which 96% were held in Asia and 4% in Europe (London Metal Exchange Ltd., 2023).

The monthly average S&P Global Platts Metals Week North American SHG zinc price in June 2023 was 139 cents per pound, 4% less than that in the previous month and 29% less than that in June 2022. The June 2023 average LME cash price for SHG zinc was \$2,367.64 per metric ton (107 cents per

pound), 4% less than that in the previous month and 35% less than that in June 2022 (fig. 3, table 8).

The North American premium to the LME cash price in June 2023 averaged 32 cents per pound, 4% less than that in the previous month but unchanged compared with that in June 2022 (fig. 3, table 8).

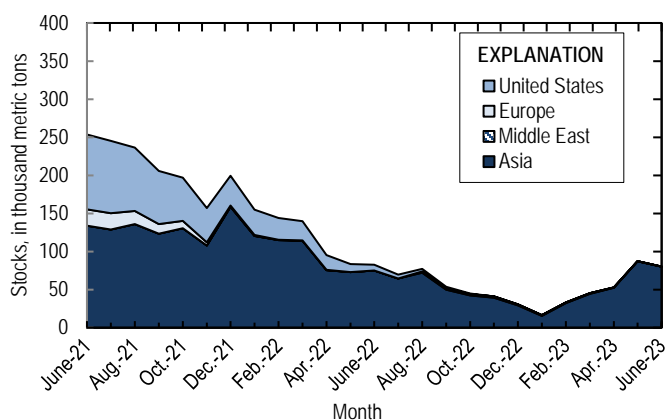


Figure 2. Global LME stocks of Special High Grade zinc, end of month, from June 2021 through June 2023. Source: London Metal Exchange Ltd.

## Government and Legislative Programs

On June 3, the Fiscal Responsibility Act of 2023 (FRA) was signed into law, which included several modifications to the National Environmental Policy Act of 1969 (NEPA). NEPA requires Federal agencies to assess the environmental effects of proposed major Federal actions before issuing permits or funding, and the FRA modifications limited the scope of the Federal administrative review under NEPA. Among the new amendments, the FRA established deadlines and page limits for environmental assessments and environmental impact statements. In addition to the NEPA reforms, the FRA also designated energy storage projects as potentially eligible for expedited environmental review under the Fixing America's Surface Transportation Act (U.S. Congress, 2023). Zinc is intensively used in infrastructure (galvanized steel) and is increasingly used in energy storage (zinc batteries).

## World News

Boliden AB (Sweden) announced that it was placing the Tara zinc mine in Ireland on care-and-maintenance status until further notice due to a combination of factors, including decreasing zinc prices, inflation, high energy prices and zinc smelter treatment charges, and operational challenges. The Tara Mine was Europe's largest zinc mine, producing 103,000 t of zinc in concentrate in 2022 (Boliden AB, 2023a, p. 20, 127; 2023b, p. 7).

Construction activity at Adriatic Metals plc's (United Kingdom) Vares zinc-lead-silver mine in Bosnia and Herzegovina was projected to be complete in October with concentrate production beginning in November. At full production, the mine would produce about 90,000 metric tons per year of zinc concentrate initially grading 55–58% zinc. Adriatic Metals held offtake agreements with Boliden and Trafigura Group Pte. Ltd. (Singapore) for the zinc concentrate, which was mostly expected to be processed by smelters in Europe (Adriatic Metals plc, 2023, p. 16; Esmen, 2023).

## References Cited

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- London Metal Exchange Ltd., 2023, Off-warrant stock reporting: London, United Kingdom, London Metal Exchange Ltd. (Accessed August 17, 2023, via <https://www.lme.com/en/Market-data/Reports-and-data/Warehouse-and-stocks-reports/Off-warrant-stock-reporting>.)
- U.S. Congress, 2023, H.R. 3746 [Fiscal Responsibility Act of 2023—Bill summary]: U.S. Congress. (Accessed August 18, 2023, at <https://www.congress.gov/bill/118th-congress/house-bill/3746>.)

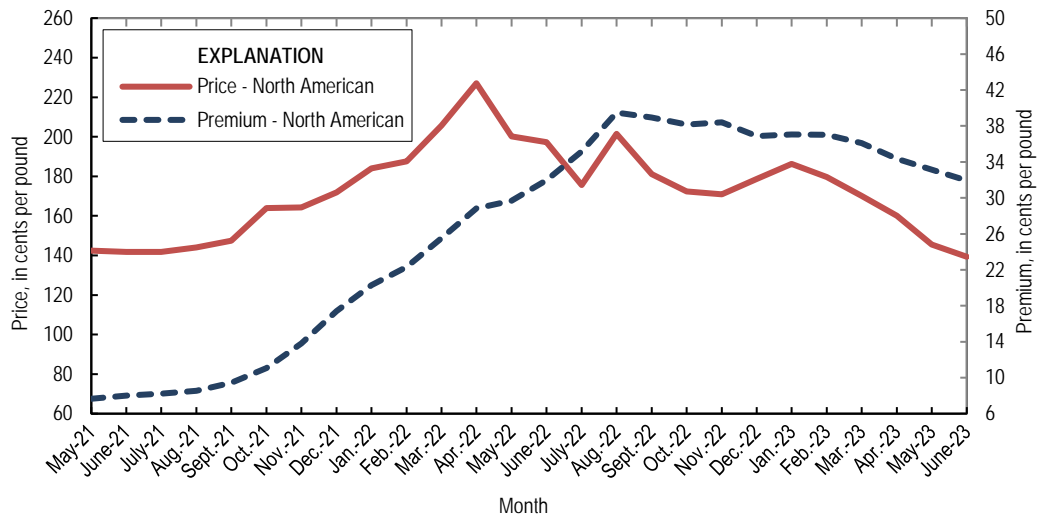


Figure 3. Average monthly North American price and premium for Special High Grade zinc from June 2021 through June 2023. The North American price is based on the London Metal Exchange cash price plus the North American premium. Source: S&P Global Platts Metals Week.

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

(Metric tons, unless otherwise specified)

	2022	2023		
	January– December <sup>p</sup>	May	June	January– June <sup>2</sup>
Production:				
Mine, zinc content of concentrate <sup>3</sup>	761,000	65,600	70,500	375,000
Mine, recoverable zinc <sup>3</sup>	744,000	64,100	69,000	366,000
Smelter, refined zinc <sup>e,4</sup>	220,000	18,000	18,000	108,000
Consumption of refined zinc, apparent <sup>5</sup>	974,000	66,700	62,100	505,000
Imports for consumption:				
Ore and concentrate (zinc content)	4,870	17	2,010	14,300
Refined zinc	762,000	49,200	44,100	398,000
Exports:				
Ore and concentrate (zinc content)	644,000	8,870	14,300	67,600
Refined zinc	8,070	564	84	1,570
Price: <sup>6</sup>				
London Metal Exchange cash, average, dollars per metric ton	3,484.42	2,477.10	2,367.64	2,833.99
North American, <sup>7</sup> average, cents per pound	190.19	145.49	139.33	163.48

<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:			
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	68,300	66,800	18,000
February	55,200	53,900	18,000
March	59,500	58,100	18,000
April	55,800	54,500	18,000
May	65,600	64,100	18,000
June	70,500	69,000	18,000
January–June	375,000	366,000	108,000

<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:	
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–June	8,430,000
January–December	16,300,000
2023:	
January	1,290,000
February	1,280,000
March	1,380,000
April	1,410,000
May	1,440,000
June	1,410,000
January–June	8,190,000

<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)	June		January–June <sup>2</sup>	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Ore and concentrate (zinc content)	4,870	\$9,880	2,010	\$1,780	14,300	\$15,400
Unwrought:						
Refined zinc	762,000	2,710,000	44,100	132,000	398,000	1,350,000
Zinc alloys	3,770	15,200	160	704	2,440	9,170
Wrought:						
Bars, rods, profiles, wire	3,500	16,200	485	1,750	2,070	8,730
Plates, sheets, strip, foil	1,680	9,840	99	646	716	4,240
Ash and residues: <sup>3</sup>						
Hard zinc spelter	--	--	--	--	(4)	22
Zinc dross and skimmings	4,370	8,550	1,030	800	3,180	5,950
Other (zinc content)	5,610	12,000	40	47	1,540	987
Other:						
Powders, flakes, dust	19,800	92,600	1,140	4,970	8,460	38,700
Waste and scrap	10,900	23,300	736	1,590	5,210	11,500
Chemicals:						
Lithopone	1,110	4,520	24	188	162	503
Zinc chloride	419	2,830	14	136	334	1,710
Zinc oxide	104,000	371,000	7,030	23,100	48,800	166,000
Zinc sulfate	95,200	124,000	2,910	2,780	30,100	29,200
Zinc sulfide	1,930	9,710	32	450	1,020	5,830

-- 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	
		June	January–June <sup>2</sup>		June	January–June <sup>2</sup>
Ore and concentrate (zinc content):						
Canada	1,610	437	454	1,610	437	454
China	358	--	--	358	--	--
Korea, Republic of	--	1,570	3,860	--	1,570	3,860
Peru	2,670	--	--	2,670	--	--
Turkey	--	--	9,950	--	--	9,950
Other	232	--	9	232	--	9
Total	4,870	2,010	14,300	4,870	2,010	14,300
Refined zinc:						
Australia	69,000	--	39,700	74,000	--	39,700
Belgium	--	--	110	1,800	--	110
Brazil	--	2,000	13,400	10	2,000	13,400
Bulgaria	--	--	43	--	--	43
Canada	378,000	28,100	166,000	378,000	28,100	166,000
China	(3)	--	1,790	502	--	1,790
Denmark	(3)	--	--	(3)	--	--
Germany	983	--	--	983	--	--
India	--	--	4,920	--	--	4,920
Italy	3	--	1	3	--	1
Japan	2	--	1,690	2	--	1,690
Kazakhstan	17,700	--	24,400	17,700	--	24,400
Korea, Republic of	88,600	1,150	43,900	94,000	1,150	43,900
Luxembourg	--	--	75	--	--	75
Mexico	108,000	8,280	57,300	108,000	8,280	57,300
Netherlands	--	--	--	1,240	--	--
Nigeria	320	--	--	320	--	--
Peru	52,900	4,570	42,500	52,900	4,570	42,500
Poland	241	--	780	241	--	780
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	44,100	398,000	762,000	44,100	398,000
Oxide:						
Australia	197	73	235	148	73	259
Canada	44,200	2,750	18,600	44,200	2,750	18,600
China	800	--	94	800	--	81
Germany	1,870	11	250	1,870	11	250
Greece	375	17	221	375	17	221
Japan	1,210	32	310	1,210	32	310
Korea, Republic of	428	31	137	428	31	137
Mexico	41,300	3,310	24,400	41,300	3,310	24,400
Netherlands	6,900	126	1,610	6,900	126	1,610
Peru	5,850	655	2,740	5,850	655	2,740
Other	494	34	143	494	34	143
Total	104,000	7,030	48,800	104,000	7,030	48,800

-- 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)	June		January-June <sup>2</sup>	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Ore and concentrate (zinc content)	644,000	\$1,530,000	14,300	\$24,400	67,600	\$100,000
Unwrought:						
Refined zinc	8,070	28,300	84	299	1,570	5,860
Zinc alloys	44,300	124,000	2,790	9,230	19,800	60,600
Wrought:						
Bars, rods, profiles, wire	3,220	21,200	40	287	1,080	5,170
Plates, sheets, strip, foil	5,830	24,800	509	2,240	2,190	9,220
Ash and residues: <sup>3</sup>						
Hard zinc spelter	12,300	29,300	1,350	2,760	5,490	11,200
Other (zinc content)	26,900	52,900	1,960	2,840	10,800	18,900
Other:						
Powders, flakes, dust	10,600	51,700	609	3,240	3,750	19,000
Waste and scrap	190,000	183,000	3,900	4,250	26,800	31,700
Chemicals:						
Lithopone	510	1,900	21	154	226	720
Zinc chloride	1,250	1,550	90	90	703	1,080
Zinc oxide	71,400	137,000	8,730	10,500	40,700	62,300
Zinc sulfate	808	769	60	81	382	320
Zinc sulfide	2,400	14,500	91	1,040	1,040	7,300

<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	
		June	January–June <sup>2</sup>
Ore and concentrate (zinc content):			
Australia	19,300	--	--
Belgium	45,200	2,860	8,790
Canada	241,000	5,800	36,900
China	49,400	--	--
Finland	23,300	--	--
Japan	63,400	1,340	8,010
Korea, Republic of	120,000	4,300	11,000
Netherlands	3,080	--	--
Spain	79,500	--	--
Other	43	4	2,820
Total	644,000	14,300	67,600
Refined zinc:			
Belgium	758	--	--
Canada	1,460	75	497
Italy	2,470	--	1
Mexico	2,840	8	982
Spain	250	(3)	(3)
Other	293	(3)	91
Total	8,070	84	1,570
Oxide:			
Belgium	387	39	187
Brazil	285	20	128
Canada	3,710	107	741
Colombia	275	48	129
Finland	797	100	415
France	57	1	183
India	828	10	768
Italy	108	--	174
Mexico	63,500	8,260	37,000
United Kingdom	145	40	94
Other	1,240 <sup>r</sup>	102	828
Total	71,300 <sup>r</sup>	8,730	40,700

<sup>1</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:				
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
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
January–June	34.9	163.48	128.55	2,834.00

<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:							
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
April	--	--	--	52,525	--	400	52,925
May	--	--	--	87,400	--	50	87,450
June	--	--	--	80,225	--	50	80,275

-- Zero.

Source: London Metal Exchange, Ltd.