

Mineral Industry Surveys

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LEAD IN MARCH 2023

Domestic mine production (recoverable) of lead in March was 23,800 metric tons (t). Average daily mine production in March was 768 t, 3% less than the production in the previous month and 7% less than that in March 2022. Secondary refined lead production in March 2023 was 78,600 t, unchanged from the revised production in the previous month and 3% less than that in March 2022 (fig. 1; tables 1, 2).

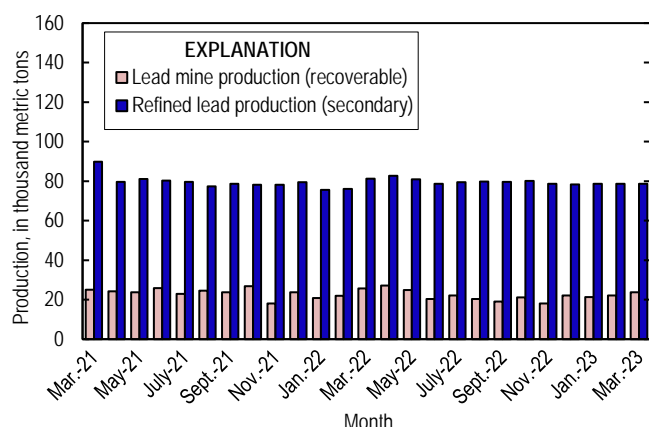


Figure 1. U.S. production of lead from March 2021 through March 2023.

The United States is a significant exporter of lead concentrates. U.S. exports of lead in ores and concentrates through March 2023 were 56,500 t, 41% more than that for the same period in 2022. The main destinations in March were Germany (29%) and the Republic of Korea (24%) (table 8). U.S. imports of unwrought lead through March were 123,000 t, 32% less than those for the same period in 2022. Leading import sources in March 2023 were Canada (36%), Kazakhstan (18%), and Mexico (16%) (table 10).

Prices and Stocks

The average London Metal Exchange, Ltd. (LME) cash price for lead in March was 95.9 cents per pound, essentially unchanged from that in the previous month and 10% less than that in March 2022 (table 3). The S&P Global Platts Metals Week (Platts) average North American Market price for lead in

March 2023 was \$1.16 per pound, essentially unchanged from that in the previous month and 8% less than that in March 2022.

The North American premium to the LME cash price in March 2023 averaged 20 cents per pound, unchanged from that in February 2023 and 4% more than that in March 2022 (fig. 2, table 3).

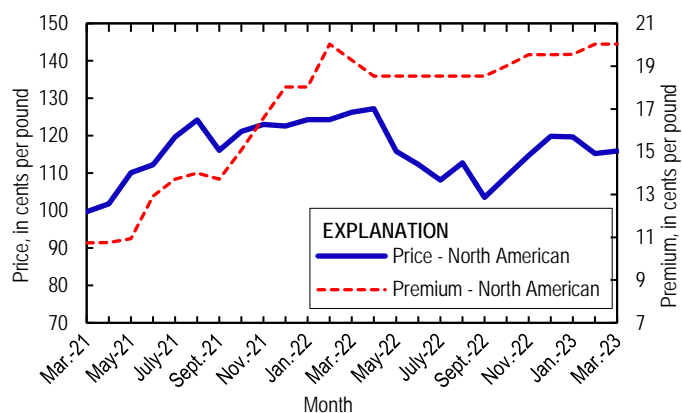


Figure 2. Average monthly North American price and premium for refined lead metal from March 2021 through March 2023. Source: S&P Global Platts Metals Week.

The Platts average U.S. used lead-acid batteries (Midwest) price in March 2023 was 19.8 cents per pound, 7% more than that in February 2023 and 19% less than that in March 2022 (table 3). Most secondary lead is recovered from used lead-acid batteries.

Global LME lead stocks at the end of March 2023 were 26,375 t, 5% more than those at the end of February 2023 and 32% less than those at the end of March 2022 (table 11).

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TABLE 1
SALIENT LEAD STATISTICS IN THE UNITED STATES¹

(Metric tons, lead content, unless otherwise specified)

	2022 ²		2023		
	January– December	January– March	February	March	January– March
Production:					
Mine (recoverable)	264,000 ^r	68,600 ^r	22,100	23,800	67,200
Secondary refinery, reported by smelters/refineries	951,000	233,000	78,600 ^r	78,600	236,000
Consumption of refined lead, apparent ^{e, 3}	1,580,000	409,000	108,000 ^r	112,000	354,000
Imports for consumption:					
Ore and concentrate	38	13	(4)	--	(4)
Bullion	--	--	--	--	--
Unwrought	652,000	181,000	30,600	35,600	123,000
Exports:					
Ore and concentrate	258,000	40,000	13,800	24,100	56,500
Bullion (gross weight)	1,550	610	--	--	71
Unwrought (gross weight)	25,800	4,970	1,630	2,220	5,420
S&P Global Platts Metals Week North American Market price (cents per pound)	116.53	124.96	115.21	115.93	116.94

^eEstimated. ^rRevised. -- Zero.

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

²May include revisions to previously published data.

³Secondary refinery production plus imports for consumption of unwrought lead minus domestic exports of unwrought lead.

⁴Less than ½ unit.

TABLE 2
MINE AND SECONDARY REFINERY PRODUCTION OF LEAD
IN THE UNITED STATES¹

(Metric tons)

Period	Mine		Secondary refinery ^c
	Lead in concentrate	Recoverable	
2022:			
January	21,500	20,900	75,500
February	22,600	22,000	76,100
March	26,400	25,700	81,200
April	27,800	27,100	82,700
May	25,500	24,800	80,900
June	21,000	20,400	78,600
July	22,800 ^r	22,200 ^r	79,500
August	22,100 ^r	20,300 ^r	79,800
September	19,600 ^r	19,100 ^r	79,600
October	21,700 ^r	21,200	80,100
November	18,700 ^r	18,100 ^r	78,600
December	22,800 ^r	22,200	78,400
January–December	273,000 ^r	264,000 ^r	951,000
2023:			
January	21,900	21,300	78,600 ^r
February	22,700	22,100	78,600 ^r
March	24,500	23,800	78,600
January–March	69,100	67,200	236,000

^cEstimated. ^rRevised.

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

TABLE 3
MONTHLY AVERAGE LEAD PRICES

	North American Market ¹	London Metal Exchange (LME) cash		Used lead-acid batteries ²
	¢/lb	¢/lb	\$/t	¢/lb
2022:				
January	124.26	106.23	2,341.99	24.63
February	124.32	104.29	2,299.16	24.50
March	126.29	106.99	2,358.79	24.40
April	127.21	108.68	2,396.05	24.50
May	115.80	97.27	2,144.48	24.90
June	112.28	93.75	2,066.73	24.50
July	108.14	89.61	1,975.54	23.75
August	112.75	94.22	2,077.24	22.70
September	103.52	84.99	1,873.66	21.56
October	109.16	90.14	1,987.32	20.00
November	114.73	95.19	2,098.65	19.30
December	119.86	100.33	2,211.80	18.50
January–December	116.53	97.64	2,152.62	22.77
2023:				
January	119.69	100.13	2,207.50	19.00
February	115.21	95.18	2,098.29	18.50
March	115.93	95.89	2,114.08	19.75
January–March	116.94	97.07	2,139.96	19.08

¹S&P Global Platts Metals Week North American Market price. Reflects the LME lead cash price plus the Platts premium for 99.97% lead.

²S&P Global Platts Metals Week assessment for used lead-acid automotive batteries (50% lead) picked up in U.S. Midwest, suitable for delivery to secondary smelters within 30 days.

Source: S&P Global Platts Metals Week.

TABLE 4
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP IN MARCH 2023¹

(Metric tons, gross weight)

Item	Stocks February 28, 2023	Net receipts	Consumption	Stocks March 31, 2023
Battery-lead	W	63,200	63,200	W
Other ²	W	5,690	5,690	W
Total	11,400 ¹	68,900	68,900	11,400
Percent change from preceding month ³	XX	0.0	0.0	0.0

¹Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

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

²Includes soft lead, solder, drosses and residues, common babbitt, antimonial lead, cable covering, type metals, and other lead-base scrap.

³Based on unrounded data; preceding monthly data may have been revised.

TABLE 5
LEAD, TIN, AND ANTIMONY RECOVERED FROM
LEAD-BASE SCRAP IN MARCH 2023¹

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	65,900	W	--
Remelt lead	W	--	--
Antimonial lead	11,900	W	W
Other ²	W	--	--
Total lead-base	78,600	174	W

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

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

²Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 6
U.S. APPARENT CONSUMPTION OF LEAD¹

(Metric tons)

Period	Production ^e	Imports ^{2, 3}	Exports ^{2, 3}	Apparent consumption ⁴
2022: ^p				
January	75,500	72,100	1,700	146,000
February	76,100	53,300	1,530	128,000
March	81,200	55,900	1,730	135,000
April	82,700	37,400	1,590	119,000
May	80,900	59,000	3,730	136,000
June	78,600	74,300	1,910	151,000
July	79,500	35,300	1,920	113,000
August	79,800	77,900	3,270	154,000
September	79,600	45,100	2,400	122,000
October	80,100	44,500	1,920	123,000
November	78,600	29,900	1,960	107,000
December	78,400	67,000	2,180	143,000
January–December	951,000	652,000	25,800	1,580,000
2023:				
January	78,600 ^r	57,200	1,570	134,000
February	78,600 ^r	30,600	1,630	108,000 ^r
March	78,600	35,600	2,220	112,000
January–March	236,000	123,000	5,420	354,000

^eEstimated. ^pPreliminary. ^rRevised.

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

²Import and export data are for Harmonized Tariff Schedule of the United States (HTS) codes 7801.10.0000, 7801.91.0000, 7801.99.9030, 7801.99.9050.

³Source: U.S. Census Bureau.

⁴Smelter production plus imports for consumption minus domestic exports.

TABLE 7
U.S. EXPORTS OF LEAD, BY CLASS¹

(Metric tons, gross weight, unless otherwise specified)

Class	2022 ²		2023		
	January– December	January– March	February	March	January– March
Ores and concentrate (lead content)	258,000	40,000	13,800	24,100	56,500
Bullion	1,550	610	--	--	71
Unwrought:					
Refined lead	4,270	308	510	420	1,190
Refined lead containing antimony as the principal alloying element	1,640	129	53	126	278
Lead alloys	16,900	4,340	1,030	1,620	3,830
Other	2,980	191	38	55	124
Total	25,800	4,970	1,630	2,220	5,420
Wrought:					
Bars, rods, profiles, and wire	910	305	55	68	164
Pipes and tubes, including fittings	23	9	8	3	18
Plates, sheets, strip, foil	6,160	1,030	679	1,390	3,260
Other	3,400	692	146	262	574
Total	10,500	2,030	888	1,730	4,020
Powders and flakes	330	70	25	35	110
Tetraethyl lead and tetramethyl lead	409	76	1	52	62
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	31,000,000	9,590,000	2,010,000	2,090,000	6,520,000
Lead waste and scrap obtained from lead-acid storage batteries	6,320	650	2,620	1,540	7,170
Other lead waste and scrap	36,400	9,330	3,350	4,320	10,900

-- Zero.

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

²May include revisions to previously published data.

Source: U.S. Census Bureau.

TABLE 8
U.S. EXPORTS OF LEAD ORES AND CONCENTRATES, BY COUNTRY OR LOCALITY¹

(Metric tons, lead content)

Country or locality	2022 ²		2023		
	January– December	January– March	February	March	January– March
Canada	35,800	7,430	6,610	3,780	13,900
China	107,000	12,300	7,200	--	15,000
Germany	7,980	--	--	7,090	7,090
Italy	7,640	--	--	--	--
Japan	27,300	3,520	--	--	--
Korea, Republic of	46,900	11,900	--	5,820	9,060
Malaysia	122	--	--	--	--
Mexico	16,800	4,150	28	3,820	7,940
Netherlands	7,960	--	--	--	--
Switzerland	--	--	--	3,560	3,560
Vietnam	1,190	654	--	--	--
Total	258,000	40,000	13,800	24,100	56,500

-- Zero.

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

²May include revisions to previously published data.

Source: U.S. Census Bureau.

TABLE 9
U.S. IMPORTS FOR CONSUMPTION OF LEAD, BY CLASS¹

(Metric tons, gross weight, unless otherwise specified)

Class	2022 ²		2023		
	January– December	January– March	February	March	January– March
Ores and concentrate (lead content)	38	13	(3)	--	(3)
Bullion (lead content)	--	--	--	--	--
Unwrought:					
Refined lead	538,000	151,000	23,800	28,600	101,000
Refined lead containing antimony as the principal alloying element (lead content)	50,800	14,000	2,090	2,690	6,850
Lead alloys (lead content)	22,100	5,360	1,920	1,200	5,000
Other (lead content)	41,000	10,800	2,800	3,140	10,100
Total	652,000	181,000	30,600	35,600	123,000
Wrought:					
Bars, rods, profiles, and wire	5,940	2,280	291	458	1,100
Pipes and tubes, including fittings	19	9	4	--	9
Plates, sheets, strip, foil	1,020	178	54	167	322
Other	5,590	873	146	186	607
Total	12,600	3,340	496	811	2,030
Powders and flakes	45	21	1	10	11
Tetraethyl lead and tetramethyl lead	165	81	--	--	17
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	621,000	160,000	172,000	80,200	296,000
Lead waste and scrap obtained from lead-acid storage batteries (lead content)	1,640	406	196	166	480
Other lead waste and scrap (lead content)	3,630	537	365	556	1,280

-- Zero.

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

²May include revisions to previously published data.

³Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 10
U.S. IMPORTS FOR CONSUMPTION OF UNWROUGHT LEAD, BY COUNTRY OR LOCALITY^{1, 2}

(Metric tons, lead content)

Country or locality of origin	2022 ³		2023		
	January– December	January– March	February	March	January– March
Argentina	274	274	--	--	--
Australia	106,000	19,300	--	2,240	2,240
Brazil	3,960	2,100	302	332	1,600
Cambodia	101	--	--	--	--
Canada	172,000	50,400	14,100	12,800	40,000
China	64,500	20,000	--	3,060	5,070
Colombia	201	--	--	--	--
Congo (Kinshasa)	1,160	956	--	--	--
Ecuador	9,070	2,570	550	395	1,690
Ghana	6,880	1,390	--	397	397
Hungary	62	--	--	--	--
India	2,330	185	--	--	37
Indonesia	407	--	--	--	--
Kazakhstan	11,400	1,820	--	6,320	27,700
Korea, Republic of	120,000	39,600	10,600	3,060	25,700
Mexico	87,800	23,400	4,900	5,770	16,800
Nigeria	26,000	7,390	--	1,150	1,180
Norway	(4)	--	--	--	--
Pakistan	14,300	--	--	--	--
Panama	300	200	--	--	--
Peru	1,530	138	72	--	72
Russia	8,900	5,770	--	--	--
Singapore	(4)	--	--	--	--
South Africa	945	298	--	20	20
Spain	675	675	--	--	--
Sweden	(4)	--	--	--	3
Taiwan	423	--	--	--	748
Turkey	--	--	--	--	18
United Kingdom	11,200	4,710	--	--	--
Venezuela	136	54	27	25	52
Total	652,000	181,000	30,600	35,600	123,000

-- Zero.

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

²Includes refined lead (Quantity 1) of Harmonized Tariff Schedule of the United States (HTS) code 7801.10.0000 and the lead content (Quantity 2) of HTS codes 7801.91.0000, 7801.99.9030, 7801.99.9050. Excludes bullion.

³May include revisions to previously published data.

⁴Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 11
LONDON METAL EXCHANGE (LME) STOCKS OF LEAD, END OF PERIOD

(Metric tons)

Period	Asia	Europe	Total
2022:			
January	47,150	5,325	52,475
February	40,000	4,300	44,300
March	34,525	4,200	38,725
April	34,025	4,100	38,125
May	35,100	3,700	38,800
June	36,700	2,800	39,500
July	36,300	2,575	38,875
August	35,200	2,300	37,500
September	30,050	2,225	32,275
October	25,400	2,225	27,625
November	21,725	2,025	23,750
December	23,200	1,950	25,150
2023:			
January	18,700	1,525	20,225
February	23,700	1,400	25,100
March	25,050	1,325	26,375

Source: London Metal Exchange, Ltd.