

Mineral Industry Surveys

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LEAD IN OCTOBER 2023

Domestic mine production (recoverable) of lead in October was 25,000 metric tons (t). Average daily mine production in October was 807 t, 28% more than the production in the previous month and 18% more than that in October 2022. Secondary refined lead production in October 2023 was 84,100 t, 3% more than the revised production in the previous month and 5% more than that in October 2022 (fig. 1; tables 1, 2).

North American Market price for lead in October 2023 was \$1.11 per pound, 6% less than that in the previous month and essentially unchanged from that in October 2022.

The North American premium to the LME cash price in October 2023 averaged 13.7 cents per pound, 9% less than that in September 2023 and 28% less than that in October 2022 (fig. 2, table 3).

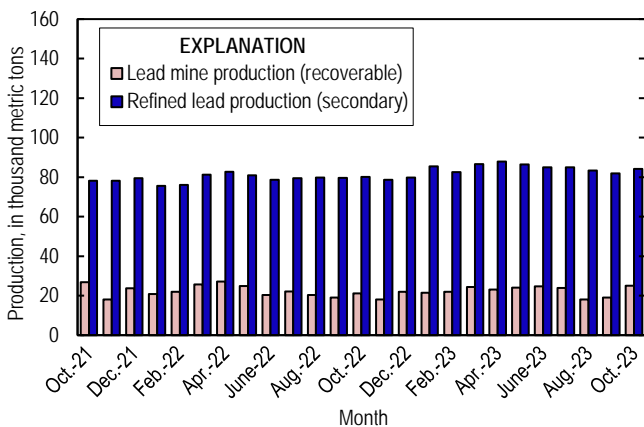


Figure 1. U.S. production of lead from October 2021 through October 2023.

The United States is a significant exporter of lead concentrates because there are no primary lead refineries. U.S. exports of lead in ores and concentrates through October 2023 were 220,000 t, 4% less than that for the same period in 2022. The main destinations in October were Belgium (43%), China (31%), and the Republic of Korea (21%) (table 8). U.S. imports of unwrought lead through October were 474,000 t, 14% less than those for the same period in 2022. Leading import sources in October 2023 were the Republic of Korea (47%), and Canada (33%) (table 10).

Prices and Stocks

The average London Metal Exchange, Ltd. (LME) cash price for lead in October was 96.88 cents per pound, 5% less than that in the previous month and 7% more than that in October 2022 (table 3). The S&P Global Platts Metals Week (Platts) average

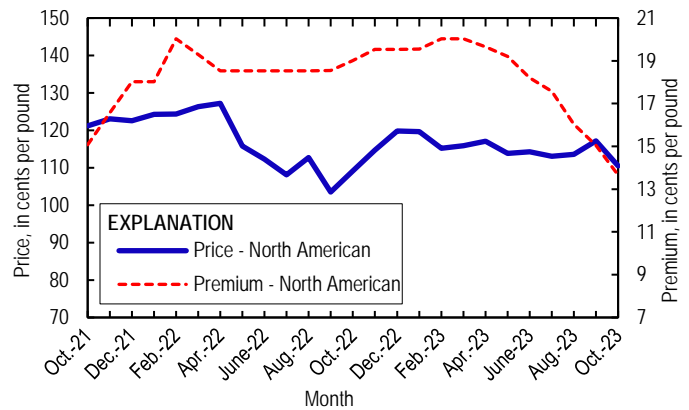


Figure 2. Average monthly North American price and premium for refined lead metal from October 2021 through October 2023. Source: S&P Global Platts Metals Week.

The Platts average U.S. used lead-acid batteries (Midwest) price in October 2023 was 22.2 cents per pound, essentially unchanged from that in September 2023 and 11% more than that in October 2022 (table 3). Most secondary lead is recovered from used lead-acid batteries.

Global LME lead stocks at the end of October 2023 were 128,350 t, 1.6 times more than those at the end of September 2023 and 4.6 times more than those at the end of October 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– October	September	October	January– October
Production:					
Mine (recoverable)	264,000	224,000	19,000	25,000	226,000
Secondary refinery, reported by smelters/refineries	960,000	801,000	81,900 ^r	84,100	848,000
Consumption of refined lead, apparent ^{e, 3}	1,590,000	1,330,000	147,000 ^r	126,000	1,300,000
Imports for consumption:					
Ore and concentrate	38	38	13	12	72
Bullion	--	--	--	--	--
Unwrought	651,000	555,000	66,100	43,600	474,000
Exports:					
Ore and concentrate	255,000	230,000	26,800	17,400	220,000
Bullion (gross weight)	1,550	1,440	--	20	242
Unwrought (gross weight)	25,800	21,700	931	1,480	20,000
S&P Global Platts Metals Week North American Market price (cents per pound)	116.53	116.37	117.21	110.54	115.05

^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.

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:			
October	21,700	21,200	80,100
November	18,700	18,100	78,600
December	22,600	22,000	79,800
January–December	272,000	264,000	960,000
2023:			
January	22,100	21,500	85,400 ^r
February	22,500	21,900	82,600 ^r
March	25,100	24,400	86,600 ^r
April	23,800	23,100	87,900 ^r
May	24,700	24,000	86,400 ^r
June	25,400	24,700	85,000 ^r
July	24,500	23,900	84,900 ^r
August	18,700	18,100	83,300 ^r
September	19,500	19,000	81,900 ^r
October	25,700	25,000	84,100
January–October	232,000	226,000	848,000

^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	London Metal Exchange		Used lead-acid
	American Market ¹	(LME) cash		batteries ²
	¢/lb	¢/lb	\$/t	¢/lb
2022:				
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
April	117.10	97.45	2,148.31	20.25
May	113.86	94.66	2,086.84	20.50
June	114.27	96.05	2,117.64	20.50
July	113.11	95.53	2,106.13	21.00
August	113.60	97.57	2,151.06	21.30
September	117.21	102.16	2,252.24	22.00
October	110.54	96.88	2,135.80	22.20
January–October	115.05	97.15	2,141.79	20.50

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 OCTOBER 2023¹

(Metric tons, gross weight)

Item	Stocks September 30, 2023	Net receipts	Consumption	Stocks October 31, 2023
Battery-lead	W	58,000	59,600	W
Other ²	W	5,450	5,680	W
Total	7,700	74,700	75,900	6,530
Percent change from preceding month ³	XX	3.7	3.2	-15.2

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 OCTOBER 2023¹

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	71,000	W	--
Remelt lead	W	--	--
Antimonial lead	12,400	W	W
Other ²	W	--	--
Total lead-base	84,100	168	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 ^c	Imports ^{2,3}	Exports ^{2,3}	Apparent consumption ⁴
2022:^p				
October	80,100	44,500	1,920	123,000
November	78,600	29,600	1,960	106,000
December	79,800	67,000	2,180	145,000
January–December	960,000	651,000	25,800	1,590,000
2023:				
January	85,400 ^r	57,200	1,570	141,000 ^r
February	82,600 ^r	30,600	1,630	112,000 ^r
March	86,600 ^r	35,600	2,220	120,000 ^r
April	87,900 ^r	75,500	1,740	162,000 ^r
May	86,400 ^r	37,000	2,580	121,000 ^r
June	85,000 ^r	27,600	3,300	109,000 ^r
July	84,900 ^r	59,300	1,830	142,000 ^r
August	83,300 ^r	41,900	2,700	122,000 ^r
September	81,900 ^r	66,100	931	147,000 ^r
October	84,100	43,600	1,480	126,000
January–October	848,000	474,000	20,000	1,300,000

^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– October	September	October	January– October
Ores and concentrate (lead content)	255,000	230,000	26,800	17,400	220,000
Bullion	1,550	1,440	--	20	242
Unwrought:					
Refined lead	4,250	3,700	166	348	6,580
Refined lead containing antimony as the principal alloying element	1,640	1,200	27	73	726
Lead alloys	16,900	13,900	675	1,010	12,400
Other	2,980	2,880	62	44	313
Total	25,800	21,700	931	1,480	20,000
Wrought:					
Bars, rods, profiles, and wire	910	763	206	229	1,240
Pipes and tubes, including fittings	23	23	--	5	43
Plates, sheets, strip, foil	6,150	4,390	1,270	1,630	11,400
Other	3,400	3,090	109	73	2,330
Total	10,500	8,260	1,590	1,940	15,000
Powders and flakes	330	247	11	6	336
Tetraethyl lead and tetramethyl lead	409	284	7	2	112
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	30,900,000	26,700,000	1,320,000	1,670,000	20,200,000
Lead waste and scrap obtained from lead-acid storage batteries	6,360	3,480	3,970	3,880	27,900
Other lead waste and scrap	36,400	30,800	3,330	3,500	33,300

-- 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– October	September	October	January– October
Belgium	--	--	--	7,550	7,550
Canada	35,800	30,500	1,610	627	30,900
China	103,000	88,200	16,100	5,470	82,600
Germany	7,980	7,980	--	--	21,900
Italy	7,640	7,640	--	--	--
Japan	27,400	27,300	5,360	--	19,700
Korea, Republic of	46,900	46,900	--	3,700	23,600
Malaysia	243	--	--	--	--
Mexico	16,800	12,600	3,700	60	22,800
Netherlands	7,960	7,960	--	--	7,240
Switzerland	--	--	--	--	3,560
Vietnam	1,180	1,180	23	17	53
Total	255,000	230,000	26,800	17,400	220,000

-- 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– October	September	October	January– October
Ores and concentrate (lead content)	38	38	13	12	72
Bullion (lead content)	--	--	--	--	--
Unwrought:					
Refined lead	538,000	456,000	61,300	37,800	416,000
Refined lead containing antimony as the principal alloying element (lead content)	50,800	46,000	1,860	1,920	19,700
Lead alloys (lead content)	22,000	18,800	1,020	1,850	12,700
Other (lead content)	41,000	34,400	1,900	2,010	25,800
Total	651,000	555,000	66,100	43,600	474,000
Wrought:					
Bars, rods, profiles, and wire	5,930	5,010	77	46	2,120
Pipes and tubes, including fittings	19	17	11	6	41
Plates, sheets, strip, foil	1,040	855	138	123	1,280
Other	5,590	4,490	137	306	2,130
Total	12,600	10,400	363	481	5,570
Powders and flakes	45	44	--	--	15
Tetraethyl lead and tetramethyl lead	165	146	9	--	194
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	621,000	551,000	98,300	62,900	770,000
Lead waste and scrap obtained from lead-acid storage batteries (lead content)	1,640	1,310	154	159	1,500
Other lead waste and scrap (lead content)	3,630	2,700	651	594	5,570

-- 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 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– October	September	October	January– October
Argentina	274	274	--	--	--
Australia	106,000	97,500	20,100	338	63,900
Brazil	3,960	3,960	--	--	3,010
Cambodia	101	101	--	--	--
Canada	172,000	154,000	13,500	14,200	133,000
China	64,500	64,500	--	--	5,070
Colombia	201	201	--	--	--
Congo (Brazzaville)	--	--	--	100	474
Congo (Kinshasa)	1,160	1,160	--	--	--
Ecuador	9,070	7,090	898	525	5,600
Germany	--	--	--	--	6
Ghana	6,880	5,890	1,290	1,110	9,110
Hungary	62	62	--	--	--
India	2,330	2,310	39	39	1,150
Indonesia	407	407	--	--	--
Kazakhstan	11,500	11,500	--	--	38,600
Korea, Republic of	120,000	77,400	19,700	20,300	127,000
Mexico	87,800	71,900	5,830	4,140	55,500
Netherlands	--	--	--	8	13
Nigeria	26,000	23,400	3,980	1,390	22,200
Norway	(4)	--	--	--	--
Pakistan	14,300	10,800	--	--	--
Panama	300	300	--	--	--
Peru	1,530	1,260	71	--	269
Russia	8,750	8,750	--	--	--
Singapore	(4)	(4)	--	--	--
South Africa	945	720	--	35	75
Spain	675	675	--	--	--
Sweden	(4)	(4)	--	--	3
Switzerland	--	--	--	25	25
Taiwan	423	--	--	--	748
Thailand	--	--	192	400	1,050
Turkey	--	--	--	--	18
United Kingdom	11,200	11,000	224	942	6,260
Venezuela	136	109	245	--	846
Total	651,000	555,000	66,100	43,600	474,000

-- 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:			
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
April	31,025	1,275	32,300
May	35,225	1,225	36,450
June	40,175	1,200	41,375
July	53,925	1,150	55,075
August	53,750	1,100	54,850
September	76,675	1,650	78,325
October	125,675	2,675	128,350

Source: London Metal Exchange, Ltd.