

Mineral Industry Surveys

For information, contact:

Kateryna Klochko, Lead Commodity Specialist
National Minerals Information Center
U.S. Geological Survey
Telephone: (703) 648-4977
Email: kklochko@usgs.gov

Christine Pisut (Data)
Telephone: (703) 648-7942
Email: cpisut@usgs.gov

Internet: <https://www.usgs.gov/centers/national-minerals-information-center/mineral-industry-surveys>

LEAD IN SEPTEMBER 2023

Domestic mine production (recoverable) of lead in September was 19,000 metric tons (t). Average daily mine production in September was 633 t, 8% more than the production in the previous month and essentially unchanged from that in September 2022. Secondary refined lead production in September 2023 was 74,900 t, slightly less than the production in the previous month and 6% less than that in September 2022 (fig. 1; tables 1, 2).

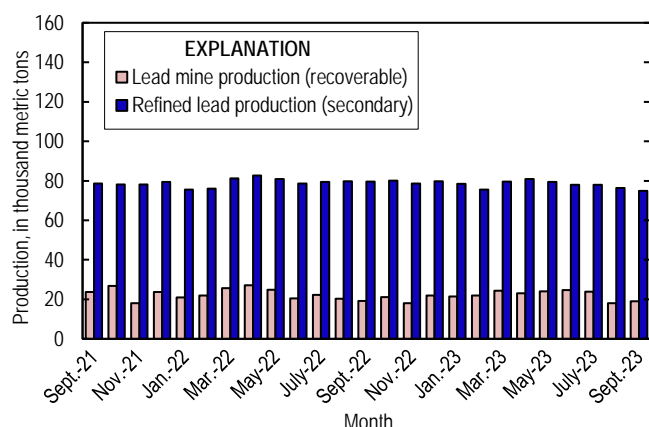


Figure 1. U.S. production of lead from September 2021 through September 2023.

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 September 2023 were 202,000 t, 3% less than that for the same period in 2022. The main destinations in September were China (60%), Japan (20%), and Mexico (14%) (table 8). U.S. imports of unwrought lead through September were 431,000 t, 16% less than those for the same period in 2022. Leading import sources in September 2023 were Argentina (30%), the Republic of Korea (30%), and Canada (20%) (table 10).

Prices and Stocks

The average London Metal Exchange, Ltd. (LME) cash price for lead in September was 102.16 cents per pound, 5% more

than that in the previous month and 20% more than that in September 2022 (table 3). The S&P Global Platts Metals Week (Platts) average North American Market price for lead in September 2023 was \$1.17 per pound, 3% more than that in the previous month and 13% more than that in September 2022.

The North American premium to the LME cash price in September 2023 averaged 15 cents per pound, 6% less than that in August 2023 and 19% less than that in September 2022 (fig. 2, table 3).

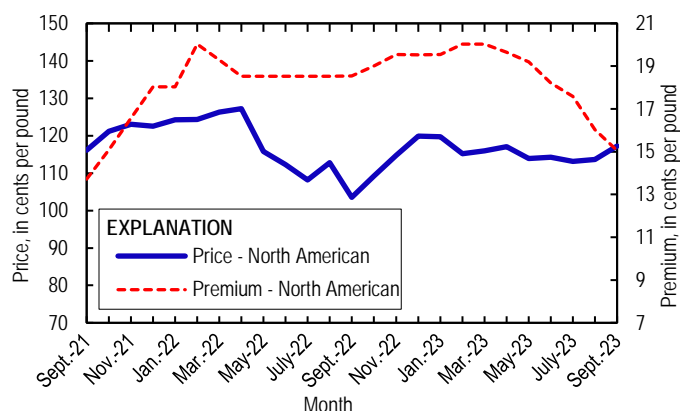


Figure 2. Average monthly North American price and premium for refined lead metal from September 2021 through September 2023. Source: S&P Global Platts Metals Week.

The Platts average U.S. used lead-acid batteries (Midwest) price in September 2023 was 22 cents per pound, 3% more than that in August 2023 and slightly more than that in September 2022 (table 3). Most secondary lead is recovered from used lead-acid batteries.

Global LME lead stocks at the end of September 2023 were 78,325 t, 43% more than those at the end of August 2023 and almost 2.5 times more than those at the end of September 2022 (table 11).

List services and web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to <https://www.usgs.gov/centers/national-minerals-information-center/publications>.

TABLE 1
SALIENT LEAD STATISTICS IN THE UNITED STATES¹

(Metric tons, lead content, unless otherwise specified)

	2022 ²		2023		
	January– December	January– September	August	September	January– September
Production:					
Mine (recoverable)	264,000	203,000	18,100	19,000	201,000
Secondary refinery, reported by smelters/refineries	960,000	721,000	76,300	74,900	701,000
Consumption of refined lead, apparent ^{e, 3}	1,590,000	1,210,000	116,000	140,000	1,110,000
Imports for consumption:					
Ore and concentrate	38	38	17	13	60
Bullion	--	--	--	--	--
Unwrought	651,000	510,000	41,900	66,100	431,000
Exports:					
Ore and concentrate	255,000	210,000	41,400	26,800	202,000
Bullion (gross weight)	1,550	1,440	--	--	222
Unwrought (gross weight)	25,800	19,800	2,700	931	18,500
S&P Global Platts Metals Week North American Market price (cents per pound)	116.53	117.18	113.60	117.21	115.55

^eEstimated. -- 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:			
September	19,600	19,100	79,600
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	78,400
February	22,500	21,900	75,600
March	25,100	24,400	79,600
April	23,800	23,100	80,900
May	24,700	24,000	79,400
June	25,400	24,700	78,000
July	24,500	23,900	77,900
August	18,700	18,100	76,300
September	19,500	19,000	74,900
January–September	206,000	201,000	701,000

^cEstimated.

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 ¢/lb	London Metal Exchange (LME) cash		Used lead-acid batteries ² ¢/lb
		¢/lb	\$/t	
2022:				
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
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
January–September	115.55	97.18	2,142.45	20.31

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 SEPTEMBER 2023¹

(Metric tons, gross weight)

Item	Stocks August 31, 2023	Net receipts	Consumption	Stocks September 30, 2023
Battery-lead	W	58,000	59,600	W
Other ²	W	5,460	5,360	W
Total	9,140 ¹	63,500	65,000	7,700
Percent change from preceding month ³	XX	-11.4	-6.9	-15.7

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 SEPTEMBER 2023¹

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	63,700	W	--
Remelt lead	W	--	--
Antimonial lead	10,500	W	W
Other ²	W	--	--
Total lead-base	74,900	169	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				
September	79,600	45,100	2,380	122,000
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	78,400	57,200	1,570	134,000
February	75,600	30,600	1,630	105,000
March	79,600	35,600	2,220	113,000
April	80,900	75,500	1,740	155,000
May	79,400	37,000	2,580	114,000
June	78,000	27,600	3,300	102,000
July	77,900	59,300	1,830	135,000
August	76,300	41,900	2,700	116,000
September	74,900	66,100	931	140,000
January–September	701,000	431,000	18,500	1,110,000

^cEstimated. ^pPreliminary.

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– September	August	September	January– September
Ores and concentrate (lead content)	255,000	210,000	41,400	26,800	202,000
Bullion	1,550	1,440	--	--	222
Unwrought:					
Refined lead	4,250	3,230	1,310	166	6,230
Refined lead containing antimony as the principal alloying element	1,640	1,070	34	27	653
Lead alloys	16,900	12,600	1,340	675	11,300
Other	2,980	2,860	12	62	269
Total	25,800	19,800	2,700	931	18,500
Wrought:					
Bars, rods, profiles, and wire	910	662	176	206	1,010
Pipes and tubes, including fittings	23	23	(3)	--	39
Plates, sheets, strip, foil	6,150	3,710	1,210	1,270	9,770
Other	3,400	2,770	231	109	2,250
Total	10,500	7,170	1,610	1,590	13,100
Powders and flakes	330	206	36	11	329
Tetraethyl lead and tetramethyl lead	409	271	3	7	110
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	30,900,000	24,600,000	1,710,000	1,320,000	18,500,000
Lead waste and scrap obtained from lead-acid storage batteries	6,360	2,450	3,570	3,970	24,000
Other lead waste and scrap	36,400	27,900	3,410	3,330	29,800

-- 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 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– September	August	September	January– September
Canada	35,800	27,800	3,200	1,610	30,200
China	103,000	73,900	17,300	16,100	77,100
Germany	7,980	7,980	--	--	21,900
Italy	7,640	7,640	--	--	--
Japan	27,400	27,300	2,750	5,360	19,700
Korea, Republic of	46,900	43,400	7,140	--	19,900
Malaysia	243	--	--	--	--
Mexico	16,800	12,600	3,760	3,700	22,700
Netherlands	7,960	7,960	7,240	--	7,240
Switzerland	--	--	--	--	3,560
Vietnam	1,180	1,180	13	23	36
Total	255,000	210,000	41,400	26,800	202,000

-- 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– September	August	September	January– September
Ores and concentrate (lead content)	38	38	17	13	60
Bullion (lead content)	--	--	--	--	--
Unwrought:					
Refined lead	538,000	419,000	36,100	61,300	378,000
Refined lead containing antimony as the principal alloying element (lead content)	50,800	43,600	1,880	1,860	17,800
Lead alloys (lead content)	22,000	17,200	1,230	1,020	10,900
Other (lead content)	41,000	31,000	2,700	1,900	23,800
Total	651,000	510,000	41,900	66,100	431,000
Wrought:					
Bars, rods, profiles, and wire	5,930	4,730	20	77	2,080
Pipes and tubes, including fittings	19	13	2	11	35
Plates, sheets, strip, foil	1,040	702	174	138	1,160
Other	5,590	4,180	204	137	1,820
Total	12,600	9,630	399	363	5,090
Powders and flakes	45	42	--	--	15
Tetraethyl lead and tetramethyl lead	165	138	8	9	194
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	621,000	492,000	34,300	98,300	707,000
Lead waste and scrap obtained from lead-acid storage batteries (lead content)	1,640	1,230	184	154	1,340
Other lead waste and scrap (lead content)	3,630	2,310	719	651	4,980

-- 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– September	August	September	January– September
Argentina	274	274	--	--	--
Australia	106,000	74,800	--	20,100	63,500
Brazil	3,960	3,960	--	--	3,010
Cambodia	101	101	--	--	--
Canada	172,000	144,000	13,700	13,500	119,000
China	64,500	64,500	--	--	5,070
Colombia	201	201	--	--	--
Congo (Brazzaville)	--	--	--	--	374
Congo (Kinshasa)	1,160	1,160	--	--	--
Ecuador	9,070	6,540	350	898	5,080
Germany	--	--	6	--	6
Ghana	6,880	4,470	1,290	1,290	7,990
Hungary	62	43	--	--	--
India	2,330	2,310	39	39	1,110
Indonesia	407	407	--	--	--
Kazakhstan	11,500	11,500	--	--	38,600
Korea, Republic of	120,000	77,400	16,400	19,700	107,000
Mexico	87,800	64,600	6,150	5,830	51,400
Netherlands	--	--	--	--	5
Nigeria	26,000	21,200	3,410	3,980	20,800
Norway	(4)	--	--	--	--
Pakistan	14,300	10,800	--	--	--
Panama	300	300	--	--	--
Peru	1,530	1,160	54	71	269
Russia	8,750	8,750	--	--	--
Singapore	(4)	(4)	--	--	--
South Africa	945	500	--	--	40
Spain	675	675	--	--	--
Sweden	(4)	(4)	--	--	3
Taiwan	423	--	--	--	748
Thailand	--	--	--	192	651
Turkey	--	--	--	--	18
United Kingdom	11,200	10,800	100	224	5,320
Venezuela	136	109	386	245	846
Total	651,000	510,000	41,900	66,100	431,000

-- 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:			
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
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

Source: London Metal Exchange, Ltd.