

# Mineral Industry Surveys

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## LEAD IN SEPTEMBER 2022

Domestic mine production (recoverable) of lead in September was 20,000 metric tons (t). Average daily mine production in September was 667 t, essentially unchanged from revised production in the previous month and 16% less than that in September 2021.

Secondary refined lead production in September was 79,800 t, unchanged from production in the previous month and from that in September 2021 (fig. 1; tables 1, 2).

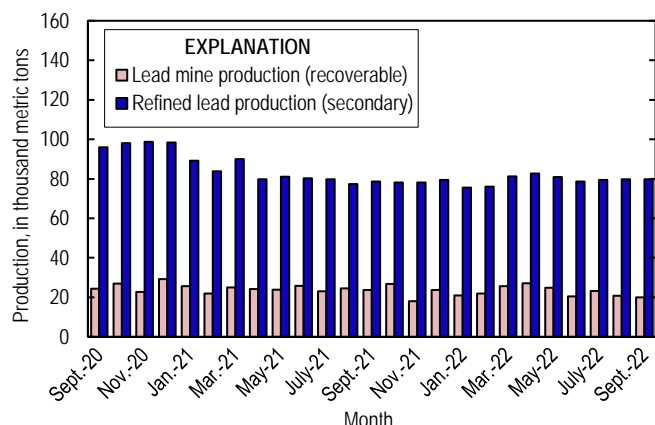


Figure 1. U.S. production of lead from September 2020 through September 2022.

The United States is a significant exporter of lead concentrates. U.S. exports of lead in ores and concentrates through September 2022 were 213,000 t, 14% more than those for the same period in 2021. The leading destinations in September were China (49%), the Republic of Korea (25%), and Japan (19%) (table 8). U.S. imports of unwrought lead through September were 510,000 t, 10% more than those for the same period in 2021. Leading import sources in September were Australia (52%), Canada (27%), and Mexico (14%) (table 10).

## Prices and Stocks

The average London Metal Exchange, Ltd. (LME) cash price for lead in September was \$0.85 per pound, 10% less than that in the previous month and 17% less than that in September 2021

(table 3). The S&P Global Platts Metals Week (Platts) average North American Market price for lead in September 2022 was \$1.04 per pound, 8% less than that in the previous month and 11% lower than that in September 2021.

The North American premium to the LME cash price in September 2022 averaged 18.5 cents per pound, unchanged from that in August 2022 and 35% more than that in September 2021 (fig. 2, table 3).

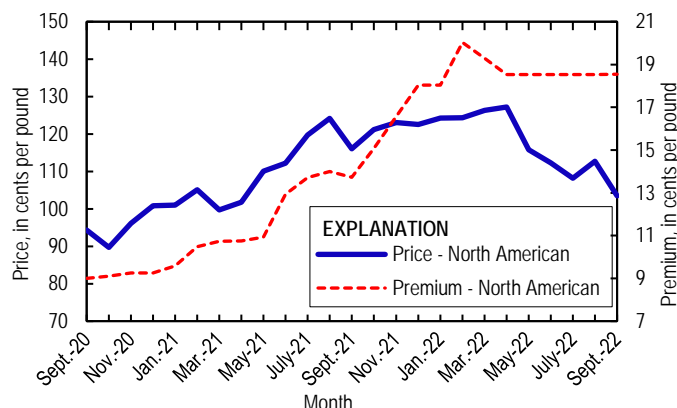


Figure 2. Average monthly North American price and premium for refined lead metal from September 2020 through September 2022. Source: S&P Global Platts Metals Week.

The Platts average U.S. used lead-acid batteries (Midwest) price in September 2022 was 21.6 cents per pound, 5% less than that in August and 29% less than that in September 2021 (table 3). Most secondary lead is recovered from used lead-acid batteries.

Global LME lead stocks at the end of September 2022 were 32,275 t, 14% less than those at the end of August 2022 and 37% less than those at the end of September 2021 (table 11).

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TABLE 1  
SALIENT LEAD STATISTICS IN THE UNITED STATES<sup>1</sup>

(Metric tons, lead content, unless otherwise specified)

	2021 <sup>2</sup>		2022		
	January– December	January– September	August	September	January– September
Production:					
Mine (recoverable)	286,000	218,000	20,800 <sup>r</sup>	20,000	205,000
Secondary refinery, reported by smelters/refineries	975,000	740,000	79,800	79,800	714,000
Consumption of refined lead, apparent <sup>e, 3</sup>	1,570,000	1,190,000	154,000	122,000	1,200,000
Imports for consumption:					
Ore and concentrate	839	809	--	--	38
Bullion	79	61	--	--	--
Unwrought	613,000	463,000	77,900	45,100	510,000
Exports:					
Ore and concentrate	262,000	187,000	43,200	33,900	213,000
Bullion (gross weight)	1,940	1,620	20	74	1,440
Unwrought (gross weight)	21,500	16,600	3,270	2,400	19,800
S&P Global Platts Metals Week North American Market price (cents per pound)	113.04	109.97	112.75	103.52	117.18

<sup>e</sup>Estimated. <sup>r</sup>Revised. -- Zero.

<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>Secondary 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 STATES<sup>1</sup>

(Metric tons)

Period	Mine		Secondary refinery <sup>c</sup>
	Lead in concentrate	Recoverable	
2021:			
September	24,400	23,700	78,700
October	27,500	26,800	78,200
November	18,500	18,000	78,200
December	24,400	23,700	79,400
January–December	294,000	286,000	975,000
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 <sup>r</sup>	27,100 <sup>r</sup>	82,700
May	25,500 <sup>r</sup>	24,800 <sup>r</sup>	80,900
June	21,000 <sup>r</sup>	20,400 <sup>r</sup>	78,600
July	24,000 <sup>r</sup>	23,300 <sup>r</sup>	79,500
August	22,700 <sup>r</sup>	20,800 <sup>r</sup>	79,800
September	20,600	20,000	79,800
January–September	212,000	205,000	714,000

<sup>c</sup>Estimated. <sup>r</sup>Revised.

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

TABLE 3  
MONTHLY AVERAGE LEAD PRICES

	North American Market <sup>1</sup> ¢/lb	London Metal Exchange (LME) cash		Used lead-acid batteries <sup>2</sup> ¢/lb
		¢/lb	\$/t	
2021:				
September	116.09	102.37	2,256.86	30.19
October	121.16	106.09	2,338.83	28.31
November	123.03	106.46	2,346.94	26.20
December	122.54	104.52	2,304.20	25.38
January–December	113.04	100.00	2,204.58	30.06
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
January–September	117.18	98.45	2,170.40	23.94

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

<sup>2</sup>S&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 2022<sup>1</sup>

(Metric tons, gross weight)

Item	Stocks August 31, 2022	Net receipts	Consumption	Stocks September 30, 2022
Battery-lead	W	67,300	64,700	W
Other <sup>2</sup>	W	6,140	7,030	W
Total	12,500	73,500	71,700	14,300
Percent change from preceding month <sup>3</sup>	XX	-0.2	-0.2	13.9

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

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

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

<sup>3</sup>Based on unrounded data; preceding monthly data may have been revised.

TABLE 5  
LEAD, TIN, AND ANTIMONY RECOVERED FROM  
LEAD-BASE SCRAP IN SEPTEMBER 2022<sup>1</sup>

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	67,800	W	--
Remelt lead	W	--	--
Antimonial lead	11,300	W	W
Other <sup>2</sup>	W	--	--
Total lead-base	79,800	173	W

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

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

<sup>2</sup>Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 6  
U.S. APPARENT CONSUMPTION OF LEAD<sup>1</sup>

(Metric tons)

Period	Production	Imports <sup>2, 3</sup>	Exports <sup>2, 3</sup>	Apparent consumption <sup>4</sup>
2021: <sup>P</sup>				
September	78,700	58,000	2,100	135,000
October	78,200	54,700	1,790	131,000
November	78,200	37,400	1,850	114,000
December	79,400	58,000	1,320	136,000
January–December	975,000	613,000	21,500	1,570,000
2022:				
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	79,800	45,100	2,400	122,000
January–September	714,000	510,000	19,800	1,200,000

<sup>P</sup>Preliminary.

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

<sup>2</sup>Import 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.

<sup>3</sup>Source: U.S. Census Bureau.

<sup>4</sup>Smelter production plus imports for consumption minus domestic exports.

TABLE 7  
U.S. EXPORTS OF LEAD, BY CLASS<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

Class	2021 <sup>2</sup>		2022		
	January– December	January– September	August	September	January– September
Ores and concentrate (lead content)	262,000	187,000	43,200	33,900	213,000
Bullion	1,940	1,620	20	74	1,440
Unwrought:					
Refined lead	907	805	797	508	3,250
Refined lead containing antimony as the principal alloying element	830	793	163	473	1,070
Lead alloys	18,400	14,200	1,620	1,400	12,600
Other	1,430	755	689	20	2,860
Total	21,500	16,600	3,270	2,400	19,800
Wrought:					
Bars, rods, profiles, and wire	886	640	78	42	663
Pipes and tubes, including fittings	61	51	2	--	23
Plates, sheets, strip, foil	4,230	3,430	401	413	3,710
Other	6,080	4,420	405	348	2,770
Total	11,200	8,550	887	804	7,170
Powders and flakes	337	207	28	23	206
Tetraethyl lead and tetramethyl lead	213	159	82	32	272
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	35,400,000	25,500,000	2,910,000	2,030,000	24,600,000
Lead waste and scrap obtained from lead-acid storage batteries	--	--	--	--	2,450
Other lead waste and scrap	37,600	28,000	3,310	3,570	27,900

-- 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.

Source: U.S. Census Bureau.



TABLE 8  
U.S. EXPORTS OF LEAD ORES AND CONCENTRATES, BY COUNTRY OR LOCALITY<sup>1</sup>

(Metric tons, lead content)

Country or locality	2021 <sup>2</sup>		2022		
	January– December	January– September	August	September	January– September
Canada	34,300	25,300	6,280	2,080	27,800
China	107,000	84,300	9,240	16,600	77,100
Germany	14,500	14,500	--	--	7,980
Italy	14,500	7,190	--	--	7,640
Japan	24,600	9,680	5,560	6,380	27,200
Korea, Republic of	37,900	28,400	9,780	8,380	43,400
Mexico	22,200	11,200	3,820	521	12,600
Netherlands	3,980	3,980	7,960	--	7,960
Philippines	81	81	--	--	--
Thailand	430	430	--	--	--
Vietnam	2,120	2,120	514	--	1,190
Total	262,000	187,000	43,200	33,900	213,000

-- 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.

Source: U.S. Census Bureau.

TABLE 9  
U.S. IMPORTS FOR CONSUMPTION OF LEAD, BY CLASS<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

Class	2021 <sup>2</sup>		2022		
	January– December	January– September	August	September	January– September
Ores and concentrate (lead content)	839	809	--	--	38
Bullion (lead content)	79	61	--	--	--
Unwrought:					
Refined lead	487,000	369,000	71,800	38,400	418,000
Refined lead containing antimony as the principal alloying element (lead content)	33,200	24,900	2,180	1,820	43,500
Lead alloys (lead content)	18,600	13,200	1,800	1,920	17,200
Other (lead content)	74,400	56,300	2,070	2,940	31,000
Total	613,000	463,000	77,900	45,100	510,000
Wrought:					
Bars, rods, profiles, and wire	6,540	5,560	239	272	4,730
Pipes and tubes, including fittings	33	33	--	1	13
Plates, sheets, strip, foil	1,040	795	114	100	684
Other	3,810	2,110	470	578	4,180
Total	11,400	8,490	823	951	9,610
Powders and flakes	62	61	--	1	42
Tetraethyl lead and tetramethyl lead	102	39	27	10	138
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	5,170,000	4,930,000	69,800	113,000	492,000
Lead waste and scrap obtained from lead-acid storage batteries (lead content)	2,640	2,040	103	105	1,230
Other lead waste and scrap (lead content)	2,100	1,490	219	258	2,310

-- 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.

Source: U.S. Census Bureau.

TABLE 10  
U.S. IMPORTS FOR CONSUMPTION OF UNWROUGHT LEAD, BY COUNTRY OR LOCALITY<sup>1</sup>

(Metric tons, lead content)

Material and country or locality of origin	2021 <sup>2</sup>		2022		
	January– December	January– September	August	September	January– September
<b>Refined lead:</b>					
Australia	38,900	25,800	1,550	23,400	74,100
Austria	203	--	--	--	--
Azerbaijan	719	517	--	--	--
Belgium	23,100	23,100	--	--	--
Brazil	2,150	1,530	--	--	3,960
Cambodia	--	--	--	--	101
Canada	93,000	67,000	7,040	6,140	66,000
Chile	3,090	3,090	--	--	--
China	16,500	--	30,000	--	64,500
Colombia	--	--	--	--	201
Congo (Kinshasa)	711	211	--	--	1,160
Dominican Republic	255	230	--	--	--
Ecuador	4,000	2,850	350	300	5,850
France	3,850	3,850	--	--	--
Germany	51,900	50,600	--	--	--
Ghana	5,140	3,060	596	793	4,430
Hungary	--	--	--	14	14
India	23	23	26	--	1,610
Indonesia	--	--	407	--	407
Israel	571	571	--	--	--
Italy	3,370	3,370	--	--	--
Kazakhstan	26,400	13,900	2,720	--	11,400
Korea, Republic of	54,000	54,000	17,700	--	77,400
Malaysia	124	124	--	--	--
Mexico	74,700	55,400	6,910	6,110	61,500
Nigeria	11,000	4,660	2,370	1,380	20,400
Pakistan	--	--	1,650	--	10,800
Panama	150	--	--	--	300
Peru	547	473	100	240	1,160
Poland	49	49	--	--	--
Russia	37,900	22,700	149	--	8,820
Serbia	302	302	--	--	--
Singapore	--	--	--	--	(4)
South Africa	1,700	1,080	202	--	500
Spain	2,680	2,680	--	--	675
Sweden	10,400	10,400	--	--	--
Switzerland	1	--	--	--	--
Ukraine	176	176	--	--	--
United Kingdom	19,600	17,200	--	25	3,090
Total	487,000	369,000	71,800	38,400	418,000
<b>Other unwrought lead:<sup>3</sup></b>					
Argentina	--	--	--	--	274
Australia	6,580	5,150	--	--	662
Brazil	99	--	--	--	--
Canada	101,000	75,800	5,610	6,210	77,900
Chile	199	--	--	--	--
Colombia	67	67	--	--	--
Dominican Republic	751	604	--	--	--
Ecuador	556	334	21	45	425
Egypt	949	949	--	--	--
Germany	3	--	--	--	--
Ghana	249	--	--	--	46
Hungary	--	--	--	--	29
India	478	303	--	--	695
Korea, Republic of	50	50	--	--	--
Mexico	10,200	8,600	259	245	3,110

See footnotes at end of table.

TABLE 10—Continued  
U.S. IMPORTS FOR CONSUMPTION OF UNWROUGHT LEAD, BY COUNTRY OR LOCALITY<sup>1</sup>

(Metric tons, lead content)

Material and country or locality of origin	2021 <sup>2</sup>		2022		
	January– December	January– September	August	September	January– September
Other unwrought lead—Continued: <sup>3</sup>					
Nigeria	--	--	124	--	788
Pakistan	16	16	--	--	--
Panama	490	297	--	--	--
Russia	172	172	--	--	80
Sweden	--	--	--	--	(4)
United Kingdom	4,150	1,840	--	180	7,740
Venezuela	217	135	27	--	109
Total	126,000	94,300	6,040	6,680	91,800
Grand total	613,000	463,000	77,800	45,100	510,000

-- 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>Includes the lead content (Quantity 2) of Harmonized Tariff Schedule of the United States (HTS) codes 7801.91.0000, 7801.99.9030, 7801.99.9050. Excludes bullion.

<sup>4</sup>Less 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
2021:			
September	31,800	19,200	51,000
October	41,325	13,675	55,000
November	47,300	9,475	56,775
December	47,725	6,650	54,375
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

Source: London Metal Exchange, Ltd.