

# Mineral Industry Surveys

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## LEAD IN NOVEMBER 2022

Domestic mine production (recoverable) of lead in November was 18,000 metric tons (t). Average daily mine production in November was 599 t, 12% less than the revised production in the previous month and unchanged from that in November 2021.

Secondary refined lead production in November 2022 was 78,600 t, slightly less than production in the previous month and essentially unchanged from that in November 2021 (fig. 1; tables 1, 2).

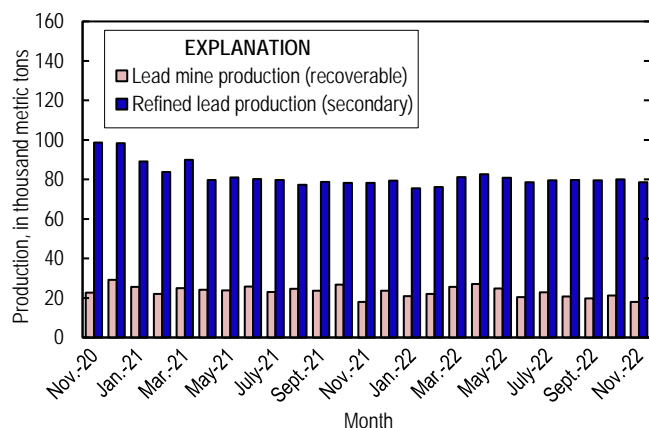


Figure 1. U.S. production of lead from November 2020 through November 2022.

The United States is a significant exporter of lead concentrates. U.S. exports of lead in ores and concentrates through November 2022 were 246,000 t, slightly less than that for the same period in 2021. The destinations in November were China (47%), Mexico (33%), and Canada (19%) (table 8). U.S. imports of unwrought lead through November were 585,000 t, 5% more than those for the same period in 2021. Leading import sources in November were Canada (32%), the Republic of Korea (30%), and Mexico (27%) (table 10).

## Prices and Stocks

The average London Metal Exchange, Ltd. (LME) cash price for lead in November was \$0.95 per pound, 6% more than that

in the previous month and 11% less than that in November 2021 (table 3). The S&P Global Platts Metals Week (Platts) average North American Market price for lead in November 2022 was \$1.15 per pound, 5% more than that in the previous month and 7% lower than that in November 2021.

The North American premium to the LME cash price in November 2022 averaged 19.5 cents per pound, 3% more than that in October 2022 and 18% more than that in November 2021 (fig. 2, table 3).

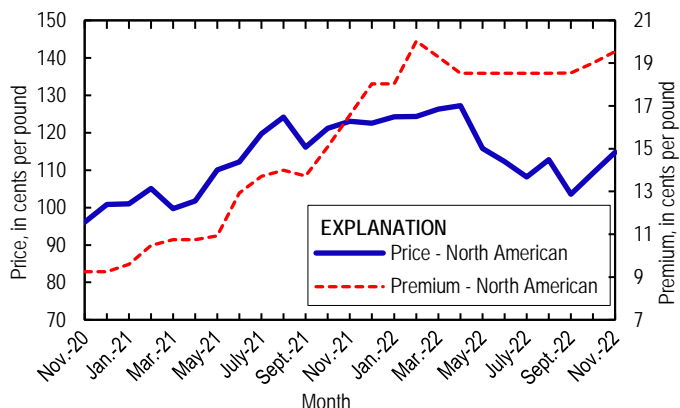


Figure 2. Average monthly North American price and premium for refined lead metal from November 2020 through November 2022. Source: S&P Global Platts Metals Week.

The Platts average U.S. used lead-acid batteries (Midwest) price in November 2022 was 19.3 cents per pound, 4% less than that in October and 26% less than that in November 2021 (table 3). Most secondary lead is recovered from used lead-acid batteries.

Global LME lead stocks at the end of November 2022 were 23,750 t, 14% less than those at the end of October 2022 and 58% less than those at the end of November 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– November	October	November	January– November
Production:					
Mine (recoverable)	286,000	262,000	21,200 <sup>r</sup>	18,000	243,000
Secondary refinery, reported by smelters/refineries	975,000	896,000	80,100	78,600	872,000
Consumption of refined lead, apparent <sup>e, 3</sup>	1,570,000	1,430,000	123,000	107,000	1,430,000
Imports for consumption:					
Ore and concentrate	839	831	--	--	38
Bullion	79	61	--	--	--
Unwrought	613,000	556,000	44,500	29,900	585,000
Exports:					
Ore and concentrate	262,000	251,000	20,400	12,600	246,000
Bullion (gross weight)	1,940	1,680	--	99	1,540
Unwrought (gross weight)	21,500	20,200	1,920	1,960	23,700
S&P Global Platts Metals Week North American Market price (cents per pound)	113.04	112.18	109.16	114.73	116.22

eEstimated. <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:			
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	27,100	82,700
May	25,500	24,800	80,900
June	21,000	20,400	78,600
July	23,500 <sup>r</sup>	22,900 <sup>r</sup>	79,500
August	22,500 <sup>r</sup>	20,700 <sup>r</sup>	79,800
September	20,300 <sup>r</sup>	19,800 <sup>r</sup>	79,600
October	21,800 <sup>r</sup>	21,200 <sup>r</sup>	80,100
November	18,500	18,000	78,600
January–November	252,000	243,000	872,000

<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>	London Metal Exchange (LME) cash		Used lead-acid batteries <sup>2</sup>
	¢/lb	¢/lb	\$/t	¢/lb
2021:				
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
October	109.16	90.14	1,987.32	20.00
November	114.73	95.19	2,098.65	19.30
January–November	116.22	97.40	2,147.24	23.16

<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 NOVEMBER 2022<sup>1</sup>

(Metric tons, gross weight)

Item	Stocks October 31, 2022	Net receipts	Consumption	Stocks November 30, 2022
Battery-lead	W	61,600	62,400	W
Other <sup>2</sup>	W	5,690	5,650	W
Total	10,800	67,300	68,100	9,930
Percent change from preceding month <sup>3</sup>	XX	-0.4	-0.7	-7.7

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 NOVEMBER 2022<sup>1</sup>

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	65,900	W	--
Remelt lead	W	--	--
Antimonial lead	12,100	W	W
Other <sup>2</sup>	W	--	--
Total lead-base	78,600	175	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>				
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	79,600	45,100	2,400	122,000
October	80,100	44,500	1,920	123,000
November	78,600	29,900	1,960	107,000
January–November	872,000	585,000	23,700	1,430,000

<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– November	October	November	January– November
Ores and concentrate (lead content)	262,000	251,000	20,400	12,600	246,000
Bullion	1,940	1,680	--	99	1,540
Unwrought:					
Refined lead	907	904	470	167	3,890
Refined lead containing antimony as the principal alloying element	830	824	129	391	1,590
Lead alloys	18,400	17,300	1,300	1,370	15,300
Other	1,430	1,200	17	24	2,910
Total	21,500	20,200	1,920	1,960	23,700
Wrought:					
Bars, rods, profiles, and wire	886	748	100	78	841
Pipes and tubes, including fittings	61	51	--	--	23
Plates, sheets, strip, foil	4,230	3,960	678	910	5,300
Other	6,080	5,830	319	176	3,270
Total	11,200	10,600	1,100	1,160	9,430
Powders and flakes	337	321	40	21	268
Tetraethyl lead and tetramethyl lead	213	209	13	53	338
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	35,400,000	32,000,000	2,150,000	1,930,000	28,700,000
Lead waste and scrap obtained from lead-acid storage batteries	--	--	1,030	1,210	4,680
Other lead waste and scrap	37,600	34,300	2,920	3,160	34,000

-- 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 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– November	October	November	January– November
Canada	34,300	32,300	2,730	2,460	33,000
China	107,000	106,000	14,200	5,960	97,200
Germany	14,500	14,500	--	--	7,980
Italy	14,500	14,500	--	--	7,640
Japan	24,600	24,500	--	--	27,200
Korea, Republic of	37,900	33,200	3,480	--	46,900
Mexico	22,200	18,600	--	4,220	16,800
Netherlands	3,980	3,980	--	--	7,960
Philippines	81	81	--	--	--
Thailand	430	430	--	--	--
Vietnam	2,120	2,120	--	--	1,190
Total	262,000	251,000	20,400	12,600	246,000

-- 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– November	October	November	January– November
Ores and concentrate (lead content)	839	831	--	--	38
Bullion (lead content)	79	61	--	--	--
Unwrought:					
Refined lead	487,000	439,000	37,000	21,800	477,000
Refined lead containing antimony as the principal alloying element (lead content)	33,200	30,500	2,440	2,400	48,400
Lead alloys (lead content)	18,600	16,100	1,650	1,730	20,600
Other (lead content)	74,400	70,000	3,350	3,930	38,300
Total	613,000	556,000	44,500	29,900	585,000
Wrought:					
Bars, rods, profiles, and wire	6,540	6,200	287	552	5,570
Pipes and tubes, including fittings	33	33	3	1	17
Plates, sheets, strip, foil	1,040	952	153	79	916
Other	3,810	3,500	304	792	5,280
Total	11,400	10,700	747	1,420	11,800
Powders and flakes	62	62	2	1	45
Tetraethyl lead and tetramethyl lead	102	50	8	--	146
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	5,170,000	5,120,000	59,600	59,500	611,000
Lead waste and scrap obtained from lead-acid storage batteries (lead content)	2,640	2,460	77	147	1,460
Other lead waste and scrap (lead content)	2,100	1,970	386	467	3,160

-- 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– November	October	November	January– November
Refined lead:					
Australia	38,900	34,800	22,700	1,010	97,800
Austria	203	--	--	--	--
Azerbaijan	719	719	--	--	--
Belgium	23,100	23,100	--	--	--
Brazil	2,150	2,150	--	--	3,960
Cambodia	--	--	--	--	101
Canada	93,000	84,800	4,630	3,190	73,800
Chile	3,090	3,090	--	--	--
China	16,500	--	(3)	--	64,500
Colombia	--	--	--	--	201
Congo (Kinshasa)	711	461	--	--	1,160
Dominican Republic	255	255	--	--	--
Ecuador	4,000	3,500	550	573	6,970
France	3,850	3,850	--	--	--
Germany	51,900	50,600	--	--	--
Ghana	5,140	4,050	1,410	595	6,430
Hungary	--	--	--	--	14
India	23	23	--	--	1,610
Indonesia	--	--	--	--	407
Israel	571	571	--	--	--
Italy	3,370	3,370	--	--	--
Kazakhstan	26,400	20,600	--	--	11,400
Korea, Republic of	54,000	54,000	--	8,910	86,300
Malaysia	124	124	--	--	--
Mexico	74,700	68,600	5,490	6,480	73,500
Nigeria	11,000	9,470	2,150	986	23,600
Pakistan	--	--	--	--	10,800
Panama	150	--	--	--	300
Peru	547	547	100	100	1,360
Poland	49	49	--	--	--
Russia	37,900	35,200	--	--	8,820
Serbia	302	302	--	--	--
Singapore	--	--	--	--	(3)
South Africa	1,700	1,680	--	--	500
Spain	2,680	2,680	--	--	675
Sweden	10,400	10,400	--	--	--
Switzerland	1	1	--	--	--
Ukraine	176	176	--	--	--
United Kingdom	19,600	19,500	--	--	3,090
Total	487,000	439,000	37,000	21,800	477,000
Other unwrought lead: <sup>4</sup>					
Argentina	--	--	--	--	274
Australia	6,580	6,190	--	--	662
Brazil	99	99	--	--	--
Canada	101,000	92,800	5,250	6,440	89,500
Chile	199	199	--	--	--
Colombia	67	67	--	--	--
Dominican Republic	751	604	--	--	--
Ecuador	556	534	--	47	471
Egypt	949	949	--	--	--
Germany	3	3	--	--	--
Ghana	249	38	--	--	46
Hungary	--	--	19	--	48
India	478	326	--	--	695
Korea, Republic of	50	50	--	--	--
Mexico	10,200	10,000	1,820	1,480	6,410

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– November	October	November	January– November
Other unwrought lead—Continued: <sup>4</sup>					
Nigeria	--	--	--	72	861
Norway	--	--	--	(3)	(3)
Pakistan	16	16	--	--	--
Panama	490	490	--	--	--
Russia	172	172	--	--	80
South Africa	--	--	219	--	219
Sweden	--	--	--	--	(3)
United Kingdom	4,150	3,920	135	--	7,870
Venezuela	217	162	--	27	136
Total	126,000	117,000	7,450	8,070	107,000
Grand total	613,000	556,000	44,400	29,900	584,000

-- 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>Less than ½ unit.

<sup>4</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.

Source: U.S. Census Bureau.

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

(Metric tons)

Period	Asia	Europe	Total
2021:			
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
October	25,400	2,225	27,625
November	21,725	2,025	23,750

Source: London Metal Exchange, Ltd.