

# Mineral Industry Surveys

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## LEAD IN MAY 2017

Domestic mine production (recoverable) of lead in May was 25,600 metric tons (t). Average daily mine production in May was 827 t, 11% less than that in the previous month. Total secondary refinery production of lead in May was 101,000 t, which was 6% less than that in the previous month and 10% more than that in May 2016 (fig. 1, table 1).

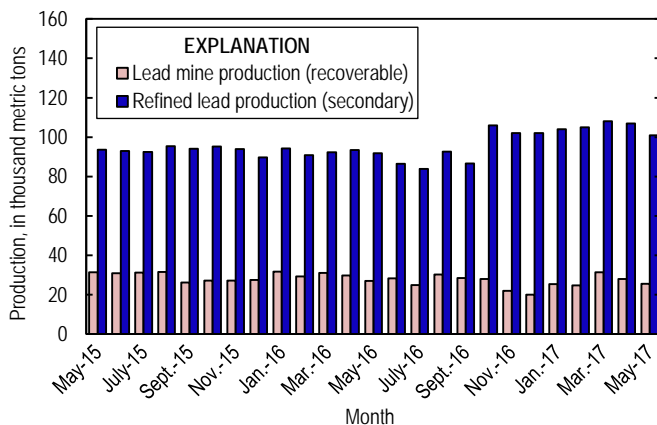


Figure 1. U.S. production of lead from May 2015 through May 2017. Source: U.S. Geological Survey.

The Platts Metals Week average North American Market price for lead in May 2017 was \$1.06 per pound, and the London Metal Exchange, Ltd. (LME) cash price was \$0.97 per pound, which were 4% less than those in the previous month but 22% and 24% more, respectively, than those in May 2016 (fig. 2, table 2). The Platts average U.S. used lead-acid batteries (Midwest) price in May 2017 was \$0.41 per pound, 3% higher than that in April and 23% more than that in May 2016 (table 2). The majority of secondary lead is produced from used lead-acid batteries.

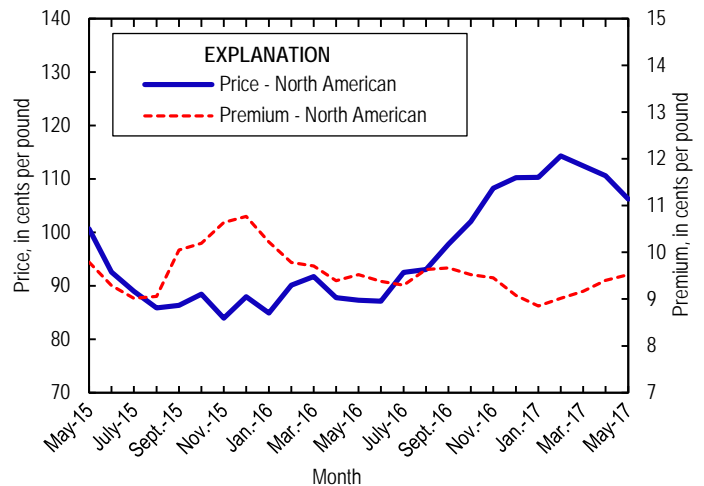


Figure 2. Average monthly North American price and premium for refined lead metal from May 2015 through May 2017. Source: Platts Metals Week.

Global LME lead stocks at the end of May 2017 were 180,275 t, which is 6% higher than those at the end of April 2017 and 3% lower than those at the end of May 2016 (table 10; London Metal Exchange Ltd., 2016, 2017).

### References Cited

- London Metal Exchange Ltd., 2016, Lead stocks: London, United Kingdom, London Metal Exchange Ltd., May 31, 3 p.
- London Metal Exchange Ltd., 2017, Lead stocks: London, United Kingdom, London Metal Exchange Ltd., May 31, 3 p.

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

(Metric tons, lead content, unless otherwise specified)

	2016		2017		
	January– December <sup>2</sup>	January– May	April	May	January– May <sup>2</sup>
Production:					
Mine (recoverable)	330,000	149,000	27,900 <sup>r</sup>	25,600	135,000
Secondary refinery:					
Reported by smelters/refineries	1,100,000	452,000	104,000	98,500	513,000
Estimated	11,100	4,570	1,060	995	5,180
Recovered from copper-base scrap <sup>e</sup>	15,000	6,250	1,250	1,250	6,250
Total secondary	1,120,000	463,000	107,000	101,000	524,000
Consumption of refined lead, apparent <sup>e,3</sup>	1,610,000	649,000	156,000	171,000	818,000
Stocks, end of period, consumers and secondary smelters	101,000	70,000	106,000	126,000	126,000
Imports for consumption:					
Ore and concentrate	3	--	--	--	--
Bullion	237	--	--	--	--
Unwrought	533,000	210,000	51,800	72,700	306,000
Exports:					
Ore and concentrate	341,000	91,700	21,900	15,900	79,800
Bullion (gross weight)	1,190	650 <sup>r</sup>	124	317	792
Unwrought (gross weight)	42,700	15,900	2,740	2,090	12,800
Platts Metals Week North American Market price (cents per pound)	94.39	88.36	110.59	106.19	110.76

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

TABLE 2  
MONTHLY AVERAGE LEAD PRICES

	North American Market <sup>1</sup>	London Metal Exchange cash		Used lead-acid batteries <sup>2</sup>
	¢/lb	¢/lb	\$/t	¢/lb
2016:				
May	87.27	77.75	1,714.05	33.25
June	87.11	77.73	1,713.60	33.75
July	92.51	83.21	1,834.36	34.13
August	93.02	83.39	1,838.50	34.50
September	97.74	88.07	1,941.64	33.75
October	102.03	92.51	2,039.50	33.88
November	108.26	98.81	2,178.38	34.10
December	110.24	101.16	2,230.30	34.25
January–December	94.39	84.84	1,870.33	32.46
2017:				
January	110.28	101.43	2,236.25	34.75
February	114.31	105.29	2,321.24	36.94
March	112.44	103.27	2,276.75	38.31
April	110.59	101.19	2,230.78	39.94
May	106.19	96.67	2,131.16	41.00
January–May	110.76	101.57	2,239.23	38.19

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

<sup>2</sup>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: Platts Metals Week.

TABLE 3  
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP IN MAY 2017<sup>1</sup>

(Metric tons, gross weight)

Item	Stocks	Net	Consumption	Stocks
	April 30, 2017	receipts		May 31, 2017
Battery-lead	53,000	81,700	82,200	52,500
Other <sup>2</sup>	4,080	1,860	1,900	4,040
Total	57,100	83,600	84,100	56,500
Percent change from preceding month <sup>3</sup>	XX	0.5	-0.2	-0.9

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 4  
LEAD, TIN, AND ANTIMONY RECOVERED FROM  
LEAD-BASE SCRAP IN MAY 2017<sup>1</sup>

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	65,200	W	--
Remelt lead	2,760	--	W
Antimonial lead	30,100	W	W
Other <sup>2</sup>	480	W	--
Total lead-base	98,500	4,890	5,010

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 5  
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>
2016: <sup>p</sup>				
May	91,900	45,500	5,500	132,000
June	86,500	49,200	2,990	133,000
July	83,900	54,700	5,100	133,000
August	92,600	36,600	4,620	125,000
September	86,700	35,100	3,230	119,000
October	106,000	35,500	3,000	139,000
November	102,000	56,300	4,450	154,000
December	102,000	55,100	3,320	154,000
January–December	1,120,000	532,000	42,700	1,610,000
2017:				
January	104,000	65,700	2,660	167,000
February	105,000	55,500	3,530	157,000
March	108,000	60,800	1,740	167,000
April	107,000	51,800	2,740	156,000
May	101,000	72,700	2,090	171,000
January–May	524,000	306,000	12,800	818,000

<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 6  
U.S. EXPORTS OF LEAD, BY CLASS<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

	2016		2017		
	Year	January–May	April	May	January–May
Ores and concentrate (lead content):	341,000	91,700	21,900	15,900	79,800
Bullion	1,190	650 <sup>r</sup>	124	317	792
Unwrought:					
Refined lead	617	192	27	1	303
Refined lead containing antimony as the principal alloying element	6,020	2,170	1,010	--	2,140
Lead alloys	35,800	13,500	1,700	2,080	10,200
Other	239	76	2	10	166
Total	42,700	15,900	2,740	2,090	12,800
Wrought:					
Bars, rods, profiles, and wire	1,560	964	93	108	583
Pipes and tubes, including fittings	387	329	26	3	99
Plates, sheets, strip, foil	2,440	916	205	421	1,050
Other	1,510	744	102	153	1,060
Total	5,900	2,950	426	685	2,790
Powders and flakes	146	64	6	37	88
Tetraethyl lead and tetramethyl lead	315 <sup>r</sup>	103	4	10	66
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	24,200,000	7,570,000	1,380,000	1,360,000	9,190,000
Lead waste and scrap obtained from lead-acid storage batteries	16,700	7,530	1,800	2,440	8,130
Other lead waste and scrap	29,200	10,400	2,890	2,650	13,500

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

<sup>1</sup>Data are rounded to more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 7  
U.S. EXPORTS OF LEAD ORES AND CONCENTRATES, BY COUNTRY<sup>1</sup>

(Metric tons, lead content)

	2016		2017		
	Year	January– May	April	May	January– May
Australia	--	--	--	--	86
Belgium	8,940	3,740	--	--	--
Canada	48,100	18,800	2,660	1,050	12,800
China	161,000	29,500	2,520	14,800	37,400
Germany	32,700	10400	--	--	3,720
Italy	17,700	7,350	7470	--	7,470
Japan	20,200	1,520	1730	--	1,730
Korea, Republic of	51,700	20,100	7450	43	16,200
Mexico	535	302	84	38	349
Saudi Arabia	--	--	--	15	15
Total	341,000	91,700	21,900	15,900	79,800

-- Zero.

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

TABLE 8  
U.S. IMPORTS FOR CONSUMPTION OF LEAD, BY CLASS<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

	2016		2017		
	Year	January– May	April	May	January– May
Ores and concentrate (lead content):	3	--	--	--	--
Bullion (lead content)	237	--	--	--	--
Unwrought:					
Refined lead	416,000	158,000	43,700	61,500	254,000
Refined lead containing antimony as the principal alloying element (lead content)	40,400	15,900	2,370	4,310	18,200
Lead alloys (lead content)	28,900	12,500	1,440	3,290	9,810
Other (lead content)	48,100	24,400	4,300	3,600	24,600
Total	533,000	210,000	51,800	72,700	306,000
Wrought:					
Bars, rods, profiles, and wire	3,360	1,040	123	152	1,380
Pipes and tubes, including fittings	45	18	(2)	(2)	22
Plates, sheets, strip, foil	1,550	547	191	211	797
Other	3,270	1,180	470	307	1,510
Total	8,230	2,780	784	670	3,710
Powders and flakes	1,310	857	58	16	177
Tetraethyl lead and tetramethyl lead	576	262	75	99	341
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	1,070	539	25	144	372
Lead waste and scrap obtained from lead-acid storage batteries (lead content)	1,480	651	1,020	949	2,510
Other lead waste and scrap (lead content)	4,420	2,010	143	231	1,160

-- Zero.

<sup>1</sup>Data are rounded to more than three significant digits; may not add to totals shown.

<sup>2</sup>Less than ½ unit.

Source: U.S. Census Bureau.

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

(Metric tons, lead content)

Material and country of origin	2016		2017		
	Year	January– May	April	May	January– May
Refined lead:					
Argentina	281	--	276	177	712
Australia	3,820	2,480	94	1,060	3,960
Azerbaijan	--	--	95	191	526
Bolivia	511	--	--	--	--
Brazil	8,090	3,460	1,060	3,820	9,730
Burma	--	--	300	200	800
Canada	176,000	70,000	13,800	14,600	72,500
China	273	273	--	--	--
Colombia	2,020	1,010	500	--	500
Dominican Republic	317	--	75	123	498
Ecuador	4,280	975	1,400	1,680	6,730
Germany	1,230	1,230	--	--	--
India	20,200	7,160	10,900	10,500	33,600
Israel	--	--	96	98	544
Kazakhstan	10,600	538	1,750	580	3,030
Korea, Republic of	89,300	38,300	219	19,200	66,700
Mexico	71,800	24,500	10,100	7,520	42,900
Nigeria	1,040	--	562	--	1,170
Peru	1,410	414	--	500	1,200
Poland	--	--	--	--	51
Russia	13,200	5,940	--	--	1,170
Saudi Arabia	608	--	197	171	999
Serbia	--	--	503	506	1,010
South Africa	677	20	100	150	528
Sri Lanka	1,720	850	200	300	1,250
Sweden	4,000	--	--	--	--
Thailand	200	--	346	220	2,010
Ukraine	79	--	--	--	--
United Arab Emirates	682	--	--	--	49
United Kingdom	289	191	131	--	227
Venezuela	3,480	237	1,060	--	1,460
<b>Total</b>	<b>416,000</b>	<b>158,000</b>	<b>43,700</b>	<b>61,500</b>	<b>254,000</b>
Other unwrought lead: <sup>2</sup>					
Argentina	20	--	149	--	806
Australia	189	--	--	--	--
Bolivia	75	75	--	--	232
Brazil	368	86	215	60	1,520
Canada	88,600	40,400	6,290	7,820	37,200
Chile	730	660	336	218	554
Costa Rica	--	--	85	--	171
Ecuador	3,710	1,320	44	1,290	1,520
Egypt	24	--	--	--	402
Ghana	246	246	--	--	--
Guatemala	646	--	--	--	--
Honduras	--	--	196	341	537
India	2,210	49	245	404	1,780
Korea, Republic of	10,200	7,100	--	--	--
Mexico	5,350	881	356	464	4,460
Mozambique	590	590	--	--	--
Netherlands	(3)	(3)	--	--	--
Panama	495	297	--	--	--
Paraguay	--	--	51	102	153
Russia	2,020	46	--	--	1,350
Senegal	438	292	98	491	785
Spain	619	619	--	--	--

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

(Metric tons, lead content)

Material and country of origin	2016		2017		
	Year	January– May	April	May	January– May
Turkey	--	--	--	(3)	(3)
United Kingdom	--	--	--	--	202
Venezuela	752	188	52	--	291
Vietnam	--	--	--	--	683
Total	117,000	52,800	8,120	11,200	52,600
Grand total	533,000	210,000	51,800	72,700	306,000

-- Zero.

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

<sup>2</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>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 10  
LONDON METAL EXCHANGE (LME) STOCKS OF LEAD, END OF PERIOD

(Metric tons)

Period	United States	Asia	Europe	Total
2016:				
April	300	93,900	80,200	174,000
May	300	90,000	95,100	185,000
June	--	89,400	95,800	185,000
July	--	89,700	97,400	187,000
August	--	89,900	97,400	187,000
September	--	88,500	102,000	190,000
October	--	85,400	103,000	189,000
November	--	84,300	103,000	188,000
December	--	79,300	116,000	195,000
2017:				
January	--	78,500	111,000	189,000
February	--	77,500	112,000	190,000
March	--	76,700	108,000	184,000
April	--	77,000	92,400	169,000
May	--	71,900	108,000	180,000

-- Zero.

Source: London Metal Exchange, Ltd.