

Mineral Industry Surveys

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LEAD IN DECEMBER 2015

Domestic mine production (recoverable) of lead in December was 27,400 metric tons (t). Average daily mine production in December was 883 t, slightly less than that in November. Lead mine production in 2015 was 3% less than that in 2014. Teck Resources Ltd. (Canada) reported that, during the fourth quarter of 2015, production of lead in concentrate at its Red Dog zinc-lead mine in Alaska declined by 22% from that in the same period of 2014 owing to reduced mill throughput and recovery rates. For the year, Teck produced 117,600 t of lead in concentrate at Red Dog, 4% less than that in 2014 (Teck Resources Ltd., 2016, p. 19, 37). Secondary refinery production of lead in December was 7% less than that of the previous month, and production in 2015 was essentially unchanged from that in 2014 (fig. 1).

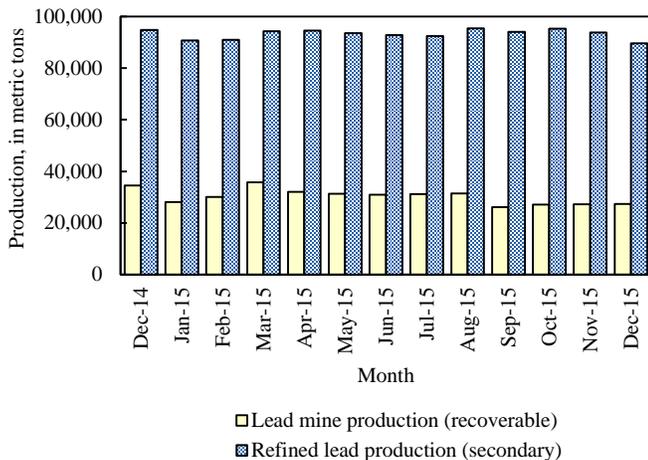


Figure 1. U.S. production of lead from December 2014 through December 2015. Source: U.S. Geological Survey.

Total imports of lead for consumption in December 2015 were slightly less than those in the previous month. In 2015, imports of lead in pigs and bars of 523,000 t were 12% less than those in 2014. In 2015, Canada (48%), Mexico (21%), and the Republic of Korea (11%) accounted for the majority of imports of lead in pigs and bars (fig. 2).

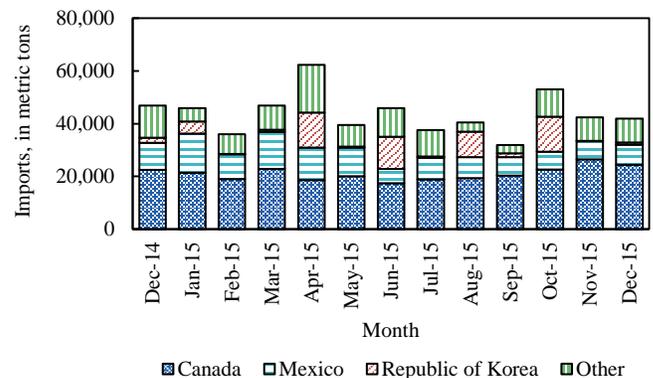


Figure 2. U.S. imports of lead in pigs and bars from December 2014 through December 2015. Source: U.S. Census Bureau.

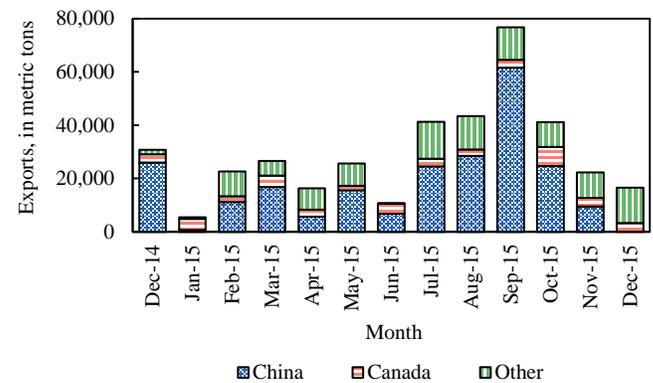


Figure 3. U.S. exports of lead in ore and concentrates from December 2014 through December 2015. Source: U.S. Census Bureau.

Total exports of lead, exclusive of scrap, in December 2015 were 17% less than those in the previous month owing to a 26% decrease in exports of lead in ore and concentrates. In 2015, exports of lead in ore and concentrates were slightly less than those in 2014; China (59%), Canada (12%), and the Republic of Korea (10%) were the leading destinations (fig. 3).

The Platts Metals Week average North American Market price for lead in December 2015 was \$0.88 per pound, 5% more than that in the previous month but 11% less than that in December 2014. In 2015, the Platts Metal Week North American Market price averaged \$0.91 per pound, 14% less than in 2014. The London Metal Exchange, Ltd. (LME) cash price of lead in December 2015 averaged \$0.77 per pound, a 5% increase from that of the previous month but 12% less than that in December 2014. In 2015, the LME cash price for lead averaged \$0.81 per pound, 15% less than in 2014 (fig. 4). The Platts average U.S. used lead-acid batteries (Midwest) price in December 2015 was \$0.28 per pound, 5% less than that in the previous month and 26% less than that in December 2014. The majority of secondary lead is produced from recycling used lead-acid batteries.

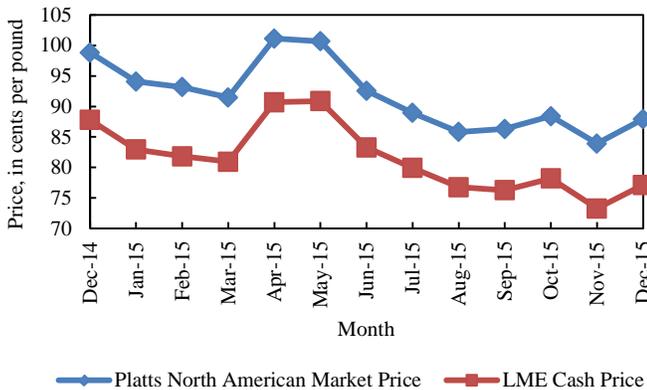


Figure 4. Average monthly prices for refined lead metal from December 2014 through December 2015. Source: Platts Metals Week.

Global LME lead stocks at the end of December 2015 were 191,650 t, a 49% increase (63,400 t) from the end of November 2015 but 14% less than those at the end of December 2014 (fig. 5).

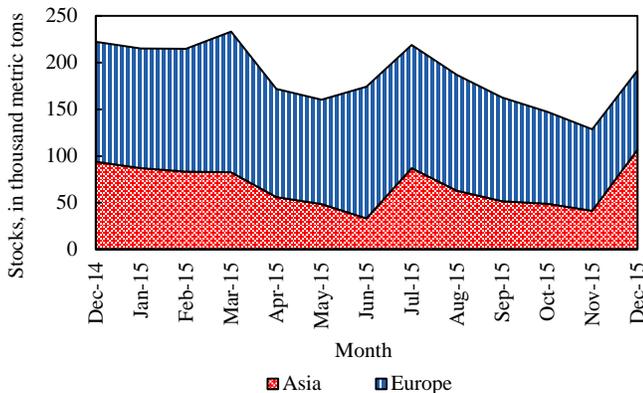


Figure 5. Global LME stocks of lead from December 2014 through December 2015. Source: London Metal Exchange, Ltd.

The Battery Council International reported that 127.2 million lead-acid automotive batteries, containing an estimated 1.25 million metric tons (Mt) of lead (based on an average of 9.84 kilograms of lead content per battery) (SmithBucklin Statistics Group, 2014, p. 4) were shipped by North American producers in 2015, a slight increase from battery shipments (126.2 million) in 2014. Shipments of replacement lead-acid automotive batteries (105.8 million) were essentially unchanged for the second consecutive year, but shipments of original equipment lead-acid automotive batteries (21.4 million) increased by 4% from those in 2014 (Battery Council International, 2016, p. 23–24).

According to preliminary data compiled by the International Lead and Zinc Study Group (ILZSG), global lead mine production was 4.35 Mt in 2015, a 12% decrease from that in 2014, owing primarily to a 25% decline in Chinese lead mine production. Lead mine production declined by lesser percentages in Australia, Ireland, and the United States and increased in India, Peru, and Sweden. The ILZSG estimated that global refined lead production in 2015 was 10.1 Mt, 8% less than that in 2014, owing primarily to an 18% decline in Chinese production to its lowest level since 2009. The ILZSG reported that global lead consumption was 10.1 Mt in 2015, 8% less than that in 2014 primarily owing to decreased consumption in China and the United States. In 2015, global production of refined lead exceeded consumption by about 63,000 t (International Lead and Zinc Study Group, 2016).

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TABLE 1
SALIENT LEAD STATISTICS IN THE UNITED STATES¹

(Metric tons, lead content, unless otherwise specified)

	2014	2015		
	January– December ²	November	December	January– December ²
Production:				
Mine (recoverable)	372,000	27,200	27,400	359,000
Secondary refinery:				
Reported by smelters/refineries	1,100,000	93,900	87,600	1,100,000
Estimated	11,200	949	885	11,100
Recovered from copper-base scrap ⁶	15,000	1,250	1,250	15,000
Total secondary	1,130,000	96,100	89,700	1,120,000
Consumption of refined lead, apparent ^{6, 3}	1,670,000	134,000	129,000	1,590,000
Stocks, end of period, consumers and secondary smelters	66,300	67,900	64,500	64,500
Imports for consumption:				
Base bullion	1,180	--	--	343
Pigs and Bars	596,000	42,400	41,900	523,000
Exports:				
Ore and concentrate	357,000	22,300	16,600	349,000
Bullion	963	36	82	596
Wrought and unwrought lead	60,300	5,280	6,160	58,800
TEL/TML preparations, based on lead compounds	1,090	87	70	724
Scrap (gross weight)	36,400	4,220	3,060	46,200
Platts Metals Week North American Market price (cents per pound)	106.17	83.92	87.92	91.20

⁶Estimated. ^PPreliminary. -- 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.

³Smelter production plus imports for consumption minus domestic exports plus stock change.

TABLE 2
MONTHLY AVERAGE LEAD PRICES

	North	London Metal Exchange		Used lead-acid
	American Market ¹	cash		batteries ²
	¢/lb	¢/lb	\$/t	¢/lb
2014:				
December	98.82	87.80	1,935.64	37.70
January–December	106.17	95.04	2,095.26	38.95
2015:				
January	94.07	82.95	1,828.83	34.50
February	93.16	81.83	1,804.13	32.13
March	91.47	80.95	1,784.55	31.00
April	101.11	90.69	1,999.35	31.50
May	100.66	90.87	2,003.42	32.13
June	92.57	83.28	1,836.03	33.60
July	88.94	79.92	1,762.00	32.88
August	85.83	76.77	1,692.49	31.13
September	86.32	76.27	1,681.56	30.30
October	88.41	78.21	1,724.18	31.00
November	83.92	73.28	1,615.54	29.63
December	87.92	77.15	1,700.87	28.00
January–December	91.20	81.02	1,786.08	31.48

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

²Platts 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 DECEMBER 2015¹

(Metric tons, gross weight)

Item	Stocks	Net receipts	Consumption	Stocks
	November 30, 2015			December 31, 2015
Battery-lead	44,600 ^r	82,600	84,600	42,500
Other ²	4,080 ^r	1,970	1,930	4,130
Total	48,700 ^r	84,600	86,600	46,700
Percent change from preceding month ³	XX	-4.6	-2.3	-4.1

^rRevised. 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 4
 LEAD, TIN, AND ANTIMONY RECOVERED FROM
 LEAD-BASE SCRAP IN DECEMBER 2015¹

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	66,800	--	--
Remelt lead	W	--	W
Antimonial lead	17,900	W	W
Other ²	2,880	167	339
Total lead-base	87,600	167	339

W Withheld to avoid disclosing company proprietary data; included in "Other." -- 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 5
U.S. APPARENT CONSUMPTION OF LEAD¹

(Metric tons)

Period	Production	Imports ^{2,3}	Exports ^{2,3}	Stock change during period	Apparent consumption ⁴
2014: ^P					
December	94,800	47,000	4,140	(30)	138,000
January–December	1,130,000	593,000	55,300	(3,279)	1,670,000
2015:					
January	90,800	45,800	3,730	(1,280)	134,000
February	91,000	36,000	4,420	(1,180)	124,000
March	94,300	46,800	4,610	(506)	137,000
April	94,600	62,300	4,820	539	151,000
May	93,600	39,400	4,490	(1,360)	130,000
June	92,900	45,800	4,180	(326)	135,000
July	92,500	37,600	3,720	(1,640)	128,000
August	95,400	40,400	4,320	6,180	125,000
September	96,300	31,900	4,230	2,610	121,000
October	97,500	52,900	6,450	(933)	145,000
November	96,100	42,400	5,010	(702)	134,000
December	89,700	41,900	5,970	(3,450)	129,000
January–December	1,120,000	523,000	55,900	(2,050)	1,590,000

^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 plus stock change.

TABLE 6
U.S. EXPORTS OF LEAD, BY CLASS¹

(Metric tons unless otherwise specified)

	2014	2015		January–December ²
	January–December ²	November	December	
Lead content:				
Ore and concentrates	357,000	22,300	16,600	349,000
Bullion	963	36	82	596
Wrought and unwrought lead	60,300	5,280	6,160	58,800
TEL/TML preparations, based on lead compounds	1,090	87	70	724
Total	420,000	27,700	22,900	409,000
Gross weight, scrap	36,400	4,220	3,060	46,200
Spent lead-acid batteries, used for starting engines (units)	30,200,000	1,320,000	1,420,000	25,900,000

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

²May include revisions to previously published data.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION BY TYPE OF MATERIALS AND BY
COUNTRY OF ORIGIN¹

(Metric tons, lead content)

Material and country of origin	2014	2015		
	January– December	November	December	January– December ²
Base bullion:				
Canada	45	--	--	--
Mexico	577	--	--	203
Panama	434	--	--	--
Venezuela	125	--	--	46
Other	--	--	--	94
Total	1,180	--	--	343
Pigs and bars:				
Australia	787	--	--	4,750
Belgium	347	--	--	--
Cameroon	96	--	--	--
Canada	266,000	26,400	24,300	251,000
Chile	3,160	--	989	989
China	59	--	444	1,250
Dominican Republic	438	--	--	50
Ecuador	9,030	1,080	1,200	12,400
France	1,560	57	--	79
Germany	191	493	974	9,630
Ghana	285	--	--	--
India	10,300	1,900	2,650	21,700
Indonesia	134	--	--	1,050
Israel	3,020	--	--	1,180
Italy	822	--	--	--
Jordan	53	--	--	--
Kazakhstan	59,900	4,490	915	22,900
Korea, Republic of	38,600	197	874	57,300
Malaysia	124	--	--	--
Mexico	120,000	6,850	7,580	111,000
Netherlands	--	--	601	6,020
Nigeria	--	--	--	522
Panama	800	224	224	848
Peru	49,700	--	--	--
Poland	75	--	--	--
Russia	18,400	280	96	10,700
Spain	5,420	273	191	1,650
Sri Lanka	740	100	100	1,290
Sweden	728	--	--	--
Ukraine	--	--	--	275
United Kingdom	3,770	2	--	2,560
Venezuela	960	24	733	3,930
Other	414 ^r	--	--	79
Total	596,000	42,400	41,900	523,000
Grand total	597,000	42,400	41,900	524,000

^rRevised. -- 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.