

LEAD

(Data in thousand metric tons of lead content unless otherwise noted)

Domestic Production and Use: The value of recoverable mined lead in 2013, based on the average North American producer price, was about \$829 million. Six lead mines in Missouri, plus lead-producing mines in Alaska and Idaho, accounted for all domestic mine production. Primary refined lead was produced at one smelter-refinery in Missouri. Of the plants that produced secondary lead at yearend 2013, 12 had capacities of 30,000 tons per year of refined lead or greater and accounted for more than 95% of secondary production. Lead was consumed at more than 70 manufacturing plants. The lead-acid battery industry accounted for about 90% of the reported U.S. lead consumption during 2013. Lead-acid batteries were primarily used as starting-lighting-ignition (SLI) batteries for automobiles and trucks and as industrial-type batteries for standby power for computer and telecommunications networks and for motive power. During the first 9 months of 2013, 93.2 million lead-acid automotive batteries were shipped by North American producers, a slight increase from those shipped in the same period of 2012.

Salient Statistics—United States:	2009	2010	2011	2012	2013^e
Production:					
Mine, lead in concentrates	406	369	342	345	340
Primary refinery	103	115	118	111	118
Secondary refinery, old scrap	1,110	1,140	1,130	1,110	1,100
Imports for consumption:					
Lead in concentrates	(1)	(1)	(1)	(1)	(1)
Refined metal, wrought and unwrought	252	273	316	351	470
Exports:					
Lead in concentrates	287	299	223	214	250
Refined metal, wrought and unwrought	82	83	47	53	50
Consumption:					
Reported	1,290	1,430	1,410	1,360	1,400
Apparent ²	1,400	1,450	1,540	1,500	1,620
Price, average, cents per pound:					
North American Producer	86.9	109	122	114	114
London Metal Exchange	78.0	97.4	109	93.5	94
Stocks, metal, producers, consumers, yearend	63	65	48	72	90
Employment:					
Mine and mill (average), number ³	1,560	1,590	1,700	1,660	1,850
Primary smelter, refineries	310	290	290	290	290
Secondary smelters, refineries	1,600	1,600	1,600	1,700	1,700
Net import reliance ⁴ as a percentage of apparent consumption	13%	13%	19%	18%	25%

Recycling: In 2013, about 1.10 million tons of secondary lead was produced, an amount equivalent to 68% of apparent domestic lead consumption. Nearly all secondary lead was recovered from old (post-consumer) scrap at secondary smelters.

Import Sources (2009–12): Metal, wrought and unwrought: Canada, 78%; Mexico, 15%; and other, 7%.

Tariff: Item	Number	Normal Trade Relations⁵ 12–31–13
Unwrought (refined)	7801.10.0000	2.5% ad val.
Antimonial lead	7801.91.0000	2.5% ad val.
Alloys of lead	7801.99.9030	2.5% ad val.

Depletion Allowance: 22% (Domestic), 14% (Foreign).

Government Stockpile: None.

Events, Trends, and Issues: Lead stocks held in global London Metal Exchange (LME) warehouses declined to 240,600 tons by the end of September from 317,700 tons at yearend 2012. LME stocks held in domestic warehouses declined to 11,000 tons from 53,225 tons during that time period. North American producer prices were relatively stable throughout the first 9 months of the year. LME lead cash prices averaged \$2,340 per metric ton in January and declined to \$2,088 per metric ton in September. Domestic mine production in 2013 was expected to be relatively unchanged from that in the previous year. In February, a silver-lead mine in Idaho, which had shut down for maintenance work in early 2012, restarted mining and reached full production capacity by late September.

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The operator of the only domestic primary lead smelter, in Herculaneum, Missouri, planned to close the smelter by yearend, per an agreement with the U.S. Environmental Protection Agency. After the smelter closes the company expected to export all of the concentrates produced at its six mines in Missouri.

In 2013, total secondary lead production in the United States was expected to be slightly less than that in 2012. Some producers expanded capacity and others closed plants, but total production capacity remained essentially unchanged. Producers, facing increased operating costs owing to regulatory changes that take effect in 2017, would need to substantially reduce allowable lead emissions. In some cases, producers closed plants instead of attempting to bring them into compliance. In April 2013, a leading producer that had closed one of its five smelters in November 2012, closed its 70,000-ton-per-year smelter in Reading, PA, and in September reduced production at its 90,000-ton-per-year plant in Vernon, CA, by 15%. Another producer, however, continued to ramp up production at its 132,000-ton-per-year secondary lead smelter in Florence, SC, which opened in 2012. Increases in exports of spent lead-acid batteries during the past few years (the majority of which went to Mexico) have decreased the amount of scrap available to secondary smelters. During the first 9 months of the year, 19.3 million spent SLI lead-acid batteries, containing an estimated 190,000 tons of lead, were exported.

Global mine production of lead was expected to increase to about 5.40 million tons in 2013, mainly owing to production increases in Australia (primarily from the restart of an 85,000-ton-per-year lead mine), and China. The International Lead and Zinc Study Group (ILZSG) forecast global refined lead production to increase by about 5% from that in 2012, to 11.0 million tons, primarily driven by new production capacity in China (despite shutdowns of many smaller smelters) and increases in Australia, Belgium, India, Italy, Kazakhstan, and Peru. ILZSG projected global lead consumption to increase by about 5% in 2013 from that in 2012, to 11.0 million tons, partially owing to an increase in China, and that global refined lead production would exceed consumption by 22,000 tons.

World Mine Production and Reserves: Reserve estimates for Peru were revised based on information from Government and industry sources.

	Mine production		Reserves ⁶
	<u>2012</u>	<u>2013^e</u>	
United States	345	340	5,000
Australia	648	690	36,000
Bolivia	88	90	1,600
Canada	59	35	450
China	2,800	3,000	14,000
India	118	120	2,600
Ireland	51	43	600
Mexico	210	220	5,600
Peru	249	250	7,500
Poland	58	60	1,700
Russia	95	90	9,200
South Africa	55	52	300
Sweden	62	62	1,100
Other countries	<u>330</u>	<u>350</u>	<u>3,000</u>
World total (rounded)	5,170	5,400	89,000

World Resources: Identified lead resources of the world total more than 2 billion tons. In recent years, significant lead resources have been demonstrated in association with zinc and (or) silver or copper deposits in Australia, China, Ireland, Mexico, Peru, Portugal, Russia, and the United States (Alaska).

Substitutes: Substitution of plastics has reduced the use of lead in cable covering, cans, and containers. Aluminum, iron, plastics, and tin compete with lead in other packaging and coatings. Tin has replaced lead in solder for new or replacement potable water systems. In the electronics industry, there has been a move toward lead-free solders with compositions of bismuth, copper, silver, and tin. Steel and zinc are common substitutes for lead in wheel weights.

^eEstimated.

¹Less than ½ unit.

²Apparent consumption series revised to reflect metal consumption. Defined as primary refined production + secondary refined production + refined imports – refined exports + adjustments for Government and industry stock changes.

³Includes lead and zinc-lead mines for which lead was either a principal product or significant byproduct.

⁴Defined as imports – exports + adjustments for Government and industry stock changes; includes trade in refined lead.

⁵No tariff for Canada, Mexico, and Peru for item shown.

⁶[See Appendix C for resource/reserve definitions and information concerning data sources.](#)