

LEAD

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

Domestic Production and Use: The value of recoverable mined lead in 2011, based on the average North American producer price, was about \$918 million. Six lead mines in Missouri, plus lead-producing mines in Alaska and Idaho, yielded all of the totals. Primary lead was processed at one smelter-refinery in Missouri. Of the plants that produced secondary lead, 14 had annual capacities of 15,000 tons or more and accounted for more than 99% of secondary production. Lead was consumed at about 76 manufacturing plants. The lead-acid battery industry continued to be the principal user of lead, accounting for about 86% of the reported U.S. lead consumption for 2011. Lead-acid batteries were primarily used as starting-lighting-ignition batteries for automobiles and trucks and as industrial-type batteries for uninterruptible power-supply equipment for computer and telecommunications networks and for motive power. During the first 9 months of 2011, 90.1 million lead-acid automotive batteries were shipped in North America, a 3% increase from those shipped in the same period of 2010.

Salient Statistics—United States:	2007	2008	2009	2010	2011^e
Production:					
Mine, lead in concentrates	444	410	406	369	345
Primary refinery	123	135	103	115	117
Secondary refinery, old scrap	1,180	1,140	1,110	1,140	1,200
Imports for consumption:					
Lead in concentrates	(1)	(1)	(1)	(1)	(1)
Refined metal, wrought and unwrought	267	314	253	272	310
Exports:					
Lead in concentrates	300	277	287	299	285
Refined metal, wrought and unwrought	57	75	82	83	75
Consumption:					
Reported	1,570	1,440	1,290	1,430	1,450
Apparent ²	1,540	1,490	1,410	1,400	1,500
Price, average, cents per pound:					
North American Producer	124	120	86.9	109	124
London Metal Exchange	117	94.8	78.0	97.4	113
Stocks, metal, producers, consumers, yearend	52	73	63	65	60
Employment:					
Mine and mill (peak), number ³	1,100	1,200	1,200	1,500	1,500
Primary smelter, refineries	340	340	310	290	290
Secondary smelters, refineries	1,600	1,600	1,600	1,600	1,600
Net import reliance ⁴ as a percentage of apparent consumption	E	E	E	E	E

Recycling: In 2011, about 1.20 million tons of secondary lead was produced, an amount equivalent to 83% of reported domestic lead consumption. Nearly all of it was recovered from old (post-consumer) scrap.

Import Sources (2007–10): Metal, wrought and unwrought: Canada, 79%; Mexico, 15%; Peru, 3%; and other, 3%.

Tariff: Item	Number	Normal Trade Relations⁵
		12-31-11
Unwrought (refined)	7801.10.0000	2.5% ad val.

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

Government Stockpile: None.

Events, Trends, and Issues: The global lead market was in surplus during 2011 owing to the buildup of lead stocks held in London Metal Exchange (LME) and producer warehouses. North American producer prices increased steadily throughout the first 8 months of the year. LME lead prices were more volatile in 2011, starting at \$2,601 per metric ton in January, increasing to \$2,741 per metric ton in April, and declining to \$2,298 per metric ton in September. Global stocks of refined lead held in LME warehouses increased by 79% to 374,125 tons during the first 9 months of 2011.

Domestic mine production in 2011 was expected to decline from that in the previous year. Two lead-producing mines closed in early 2010. A lead-producing mine in Alaska produced about 33% less lead in concentrate during the first 9 months of 2011 than it had in the corresponding period of 2010 owing to lower feed grades and recovery rates.

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The operator of the only domestic primary lead smelter announced plans to construct a new primary lead smelter at the same location as its existing smelter, which would be closed by yearend 2013, according to an agreement with the U.S. Environmental Protection Agency (EPA). The company was expected to vote on final approval for the project by yearend 2011. The new smelter would incorporate processing technology that could reduce lead emissions substantially compared with traditional lead smelting.

A leading domestic lead-acid battery manufacturer broke ground on a new \$100 million secondary lead smelter in Florence, SC. When completed in 2012, the facility would have the capacity to produce about 120,000 tons per year of secondary lead. Another producer was expanding secondary lead production capacity at an existing facility in Tampa, FL, by 400%, to 118,000 tons per year. The company was on schedule to start a new secondary lead furnace in late September and reach its expanded capacity in early 2012. In mid-2011, the EPA proposed stronger air toxic standards for secondary lead smelters that would potentially reduce lead and arsenic emissions.

Global mine production of lead was expected to increase by 9% in 2011 from that in 2010, to 4.52 million tons, mainly owing to production increases in China, India, and Mexico, offsetting declines in other regions. China was expected to account for nearly one-half of global lead mine production. Global refined lead production was expected to increase by about 7% from that in 2010, to 10.3 million tons. Increased refined lead output was expected to be primarily driven by new production capacity in China (despite shutdowns of many smaller smelters) and increases in Australia, Germany, India, and the Republic of Korea. Global lead consumption was expected to increase by about 6% in 2011 from that in 2010, to 10.1 million tons, partially owing to a 7% increase in Chinese lead consumption. The International Lead and Zinc Study Group forecast global refined lead production would exceed consumption by 188,000 tons by yearend 2011.

World Mine Production and Reserves: Reserve estimates for Australia, Canada, China, Peru, Poland, and the United States were revised based on information derived from Government and industry sources.

	Mine production		Reserves ⁶
	2010	2011 ^e	
United States	369	345	6,100
Australia	625	560	29,000
Bolivia	73	85	1,600
Canada	65	75	450
China	1,850	2,200	14,000
India	95	120	2,600
Ireland	45	50	600
Mexico	158	225	5,600
Peru	262	240	7,900
Poland	70	40	1,700
Russia	97	115	9,200
South Africa	50	55	300
Sweden	60	70	1,100
Other countries	320	340	5,000
World total (rounded)	4,140	4,500	85,000

World Resources: 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). Identified lead resources of the world total more than 1.5 billion tons.

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 towards lead-free solders with compositions of bismuth, copper, silver, and tin. Steel and zinc were common substitutes for lead in wheel weights.

^eEstimated. E Net exporter.

¹Less than ½ unit.

²Apparent consumption defined as mine production + secondary refined + imports (concentrates and refined) – exports (concentrates and refined) + 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 both concentrates and refined lead.

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

⁶See Appendix C for resource/reserve definitions and information concerning data sources.