

LEAD

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

Domestic Production and Use: The value of recoverable mined lead in 2009, based on the average North American producer price, was \$671 million. Five lead mines in Missouri, plus lead-producing mines in Alaska and Idaho, yielded most of the totals. Primary lead was processed at one smelter-refinery in Missouri. Of the 21 plants that produced secondary lead, 15 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 88% of the reported U.S. lead consumption for 2009. Lead-acid batteries were primarily used as starting-lighting-ignition (SLI) batteries for automobiles and trucks and as industrial-type batteries for uninterruptible power-supply equipment for computer and telecommunications networks; for load-leveling equipment for electrical power systems; and for motive power.

Salient Statistics—United States:	2005	2006	2007	2008	2009^e
Production:					
Mine, lead in concentrates	437	429	444	410	400
Primary refinery	143	153	123	135	115
Secondary refinery, old scrap	1,150	1,160	1,180	1,150	1,120
Imports for consumption:					
Lead in concentrates	—	(¹)	(¹)	(¹)	(¹)
Refined metal, wrought and unwrought	310	343	267	314	275
Exports:					
Lead in concentrates	390	298	300	277	275
Refined metal, wrought and unwrought	65	68	56	75	85
Shipments from Government stockpile excesses, metal	29	24	—	—	—
Consumption:					
Reported	1,490	1,490	1,570	1,470	1,400
Apparent ²	1,480	1,580	1,540	1,500	1,420
Price, average, cents per pound:					
North American Producer	61.0	77.4	124	120	79.0
London Metal Exchange	44.2	58.0	117	94.8	69.0
Stocks, metal, producers, consumers, yearend	47	54	39	57	70
Employment:					
Mine and mill (peak), number ³	1,100	1,070	1,100	1,200	1,000
Primary smelter, refineries	240	240	240	240	240
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 2009, about 1.12 million tons of secondary lead was produced, an amount equivalent to 80% of reported domestic lead consumption. Nearly all of it was recovered from old (post-consumer) scrap.

Import Sources (2005-08): Metal, wrought and unwrought: Canada, 70%; Mexico, 10%; Peru, 7%; China, 5%; and other, 8%.

Tariff:	Item	Number	Normal Trade Relations⁵
	Unwrought (refined)	7801.10.0000	12-31-09 2.5% ad val.

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

Government Stockpile: None.

Events, Trends, and Issues: Lead prices remained fairly stable throughout the first half of 2009 following declines that took place in late 2008. The forced temporary closures of several Chinese smelters in August, owing to environmental concerns, were partially responsible for sharp price increases in the third quarter that extended through yearend. Despite the loss of more than 300,000 tons per year of refined lead-production capacity worldwide, the elevated level of stocks held in LME and producer warehouses indicated that there was still ample supply of material.

Global mine production of lead concentrate increased slightly in 2009. Production increases in China, accounting for 40% of global lead mine production, offset declines in other regions. Lead is frequently recovered as a byproduct of zinc production, so lead production was affected by the downturn in the zinc market. In February, a lead-producing

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mine in northeastern Washington was placed on care-and-maintenance status owing to reduced demand for zinc. A lead-producing mine in Montana was depleted of ore in late 2008 and ceased operations after all stockpiled resources were processed in early 2009. Production rates were slowed at lead mines in Missouri owing to the decrease in lead prices. Production in Canada and Peru was expected to decline by more than 10% in 2009 as compared with that in 2008. Increases in mine production took place in Bolivia where a recently opened mine began operating at full production levels in 2009. A significant new mine in Mexico was entering the final phases of development and was expected to begin producing lead concentrates in 2010. A lead mine in Australia, shuttered since 2007, was scheduled to restart production in early 2010. Production increased in China, but in most other regions, refined lead production declined in response to the global financial crisis. In late 2008, one of two blast furnaces at the Missouri lead smelter was shut down, and production of primary lead was curtailed owing to the decline in lead prices. In March, a producer temporarily closed a secondary lead smelter in Louisiana owing to market conditions.

Lead consumption was expected to increase by 3% in 2009 worldwide owing to a nearly 25% increase in Chinese lead consumption, which was driven by growth in the automobile and electric bicycle markets. The Chinese trade balance changed in 2009 as China became a net importer of refined lead. In most other regions, lead consumption was expected to remain flat or decline. According to Battery Council International statistics, North American shipments of replacement SLI batteries through August 2009 were slightly lower, and shipments of original equipment batteries declined by 30% from those through August 2008. The Battery Council forecast a 3% decline in shipments of SLI lead-acid batteries in 2009 and a 19% decline in shipments of industrial-type lead-acid batteries as compared with those of 2008.

In response to a petition from a dozen environmental and public health organizations, the U.S. Environmental Protection Agency reversed its 2005 decision and began the rulemaking process to ban lead wheel weights.

World Mine Production and Reserves: Reserves estimates were revised based on information released by producers in the respective countries.

	Mine production		Reserves ⁶
	2008	2009 ^e	
United States	410	400	7,700
Australia	645	516	23,000
Bolivia	82	100	1,400
Canada	99	95	700
China	1,500	1,690	12,000
India	87	88	2,600
Ireland	54	50	500
Mexico	101	155	4,700
Peru	345	305	6,000
Poland	62	40	3,500
Russia	60	78	900
South Africa	46	50	300
Sweden	60	70	1,300
Other countries	289	268	14,000
World total (rounded)	3,840	3,900	79,000

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, 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. NA Not available. — Zero.

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 or significant product.

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

⁵No tariff for Mexico and Canada for item shown.

⁶See Appendix C for definitions. Reserve base estimates were discontinued in 2009; see [Introduction](#).