

LEAD

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

Domestic Production and Use: Six lead mines in Missouri, plus five mines in Alaska, Idaho, and Washington that produced lead as a principal product or byproduct, accounted for all domestic lead mine production. The value of the lead in concentrates mined in 2019, based on the average North American Market price for refined lead, was about \$630 million. Nearly all lead mine production has been exported since the last primary refinery closed in 2013. The 12 secondary refineries in 10 States accounted for more than 95% of the secondary lead produced in 2019. It was estimated that the lead-acid battery industry accounted for about 93% of reported U.S. lead consumption during 2019. Lead-acid batteries were primarily used as starting-lighting-ignition (SLI) batteries for automobiles, as industrial-type batteries for standby power for computer and telecommunications networks, and for motive power. During the first 9 months of 2019, 97 million lead-acid automotive batteries were shipped by North American producers, a 3% decrease from those shipped in the same period of 2018.

Salient Statistics—United States:	2015	2016	2017	2018	2019^e
Production:					
Mine, lead in concentrates	370	346	310	280	280
Primary refinery	—	—	—	—	—
Secondary refinery, old scrap	1,050	1,110	1,140	1,140	1,200
Imports for consumption:					
Lead in concentrates	—	—	(1)	—	(1)
Refined metal, unwrought (gross weight)	521	533	658	563	520
Exports:					
Lead in concentrates	350	341	269	251	260
Refined metal, unwrought (gross weight)	56	43	24	67	28
Consumption, apparent ²	1,510	1,600	1,770	1,630	1,650
Price, average, cents per pound:³					
North American market	91.2	94.4	114.5	110.9	100.0
London Metal Exchange (LME), cash	81.0	84.8	105.1	101.8	91.0
Employment, number:					
Mine and mill (average) ⁴	1,970	1,970	1,890	1,870	1,790
Net import reliance⁵ as a percentage of apparent consumption, refined metal					
	31	31	36	30	30

Recycling: In 2019, about 1.2 million tons of secondary lead was produced, an amount equivalent to 73% of apparent domestic consumption. Nearly all secondary lead was recovered from old scrap, mostly lead-acid batteries.

Import Sources (2015–18): Refined metal: Canada, 44%; Mexico, 18%; Republic of Korea, 17%; India, 5%; and other, 16%.

Tariff: Item	Number	Normal Trade Relations 12–31–19
Lead ores and concentrates, lead content	2607.00.0020	1.1¢/kg on lead content.
Refined lead	7801.10.0000	2.5% on the value of the lead content.
Antimonial lead	7801.91.0000	2.5% on the value of the lead content.
Alloys of lead	7801.99.9030	2.5% on the value of the lead content.
Other unwrought lead	7801.99.9050	2.5% on the value of the lead content.

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

Government Stockpile: None.

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Events, Trends, and Issues: During the first 11 months of 2019, the average LME cash price for lead was 91 cents per pound, 11% less than the average price in 2018. Global stocks of lead in LME-approved warehouses were 67,275 tons in mid-December 2019, which was 37% less than those at yearend 2018.

In 2019, domestic mine production was estimated to be essentially unchanged from that in the previous year in all four lead-producing States. Production at one mine in Idaho continued to be relatively low owing to an employee strike, which began in March 2017. The United States has become more reliant on imported refined lead in recent years owing to the closure of the last primary lead smelter in 2013. In the first 10 months of 2019, 22.9 million spent SLI lead-acid batteries were exported, essentially unchanged compared with that in the same time period in 2018.

According to the International Lead and Zinc Study Group,⁶ global refined lead production in 2019 decreased by 0.3% to 11.76 million tons, and metal consumption decreased by 0.5% to 11.81 million tons, resulting in a production-to-consumption deficit of about 50,000 tons of refined lead owing to the decline in automobile production and increased uses of lithium-ion batteries.

World Mine Production and Reserves: Reserves estimates for Australia, Peru, and Turkey were revised based on new information from company or Government reports.

	Mine production		Reserves ⁷
	2018	2019 ^e	
United States	280	280	5,000
Australia	432	430	⁸ 36,000
Bolivia	112	100	1,600
China	2,100	2,100	18,000
India	192	190	2,500
Kazakhstan	86	90	2,000
Mexico	240	240	5,600
Peru	289	290	6,300
Russia	220	220	6,400
Sweden	65	60	1,100
Turkey	76	70	860
Other countries	468	430	5,000
World total (rounded)	4,560	4,500	90,000

World Resources: Identified world lead resources total more than 2 billion tons. In recent years, significant lead resources have been identified 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 by plastics has reduced the use of lead in cable covering and cans. Tin has replaced lead in solder for potable water systems. The electronics industry has moved toward lead-free solders and flat-panel displays that do not require lead shielding. Steel and zinc are common substitutes for lead in wheel weights.

^eEstimated. — Zero.

¹Less than ½ unit.

²Defined as primary refined production + secondary refined production (old scrap) + refined imports – refined exports.

³Source: Platts Metal Week.

⁴Includes lead and zinc-lead mines for which lead was either a principal product or significant byproduct.

⁵Defined as imports – exports.

⁶International Lead and Zinc Study Group, 2019, ILZSG session/forecasts: Lisbon, Portugal, International Lead and Zinc Study Group news release, October 28, 7 p.

⁷See Appendix C for resource and reserve definitions and information concerning data sources.

⁸For Australia, Joint Ore Reserves Committee-compliant reserves were 12 million tons.