

LEAD

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

Domestic Production and Use: Six lead mines in Missouri, plus four mines in Alaska and Idaho that produced lead as a principal product or byproduct, accounted for all domestic lead mine production. One mine in Washington closed after the current reserves were exhausted in 2019. The value of the lead in concentrates mined in 2020, based on the average North American Market price for refined lead, was about \$574 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 2020. It was estimated that the lead-acid battery industry accounted for about 92% of reported U.S. lead consumption during 2020. 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 7 months of 2020, 73 million lead-acid automotive batteries were shipped by North American producers, essentially unchanged from those shipped in the same period of 2019.

Salient Statistics—United States:

	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020^e</u>
Production:					
Mine, lead in concentrates	346	310	280	274	290
Primary refinery	—	—	—	—	—
Secondary refinery, old scrap	1,110	1,140	1,140	1,170	1,100
Imports for consumption:					
Lead in concentrates	—	(¹)	—	(¹)	—
Refined metal, unwrought (gross weight)	533	658	563	501	370
Exports:					
Lead in concentrates	341	269	251	259	270
Refined metal, unwrought (gross weight)	43	24	70	25	17
Consumption, apparent ²	1,600	1,770	1,630	1,650	1,500
Price, average, cents per pound: ³					
North American market	94.4	114.5	110.9	99.9	89.8
London Metal Exchange (LME), cash	84.8	105.1	101.8	91.0	81.5
Employment, mine and mill (average), number ⁴	1,970	1,890	1,860	1,790	1,900
Net import reliance ⁵ as a percentage of apparent consumption, refined metal	31	36	30	29	24

Recycling: In 2020, about 1.1 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 (2016–19): Refined metal: Canada, 44%; the Republic of Korea, 18%; Mexico, 18%; India, 5%; and other, 15%.

<u>Tariff:</u>	<u>Item</u>	<u>Number</u>	<u>Normal Trade Relations</u> <u>12–31–20</u>
	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 10 months of 2020, the average LME cash price for lead was 81.5 cents per pound, 10% less than the average price in 2019. Global stocks of lead in LME-approved warehouses were 124,000 tons in October 2020, which was 88% more than those at yearend 2019.

In 2020, domestic mine production was estimated to have increased by 6% from that in the previous year. However, domestic production of secondary lead decreased by 6% from that in the previous year. U.S. apparent consumption of refined lead decreased by 9% from that in the previous year. In the first 9 months of 2020, 19.7 million spent SLI lead-acid batteries were exported, slightly less than that in the same time period in 2019.

According to the International Lead and Zinc Study Group,⁶ global refined lead production in 2020 decreased by 4% to 11.7 million tons, and metal consumption decreased by 7% to 11.4 million tons. In 2020, the quarantine-related restrictions imposed as a result of the global COVID-19 pandemic affected the mining industry in several countries, especially Bolivia, Kazakhstan, Mexico, and Peru.⁷ Consequently, world mine production fell by 7% in 2020 compared with the previous year.

World Mine Production and Reserves: Reserves estimates for Peru and Russia were revised based on new information from Government reports.

	Mine production		Reserves ⁸
	2019	2020 ^e	
United States	274	290	5,000
Australia	509	480	⁹ 36,000
Bolivia	88	65	1,600
China	2,000	1,900	18,000
India	200	210	2,500
Kazakhstan	56	30	2,000
Mexico	259	240	5,600
Peru	308	240	6,000
Russia	230	220	4,000
Sweden	69	70	1,100
Tajikistan	65	65	NA
Turkey	71	72	860
Other countries	591	520	5,000
World total (rounded)	4,720	4,400	88,000

World Resources:⁸ 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 Metals Week.

⁴Includes lead and zinc-lead mines for which lead was either a principal product or significant byproduct. Data from the Mine Safety and Health Administration.

⁵Defined as imports – exports.

⁶International Lead and Zinc Study Group, 2020, ILZSG session/forecasts: Lisbon, Portugal, International Lead and Zinc Study Group news release, October 16.

⁷International Lead and Zinc Study Group, 2020, ILZSG session/forecasts: Lisbon, Portugal, International Lead and Zinc Study Group press release, October 21.

⁸See Appendix C for resource and reserve definitions and information concerning data sources.

⁹For Australia, Joint Ore Reserves Committee-compliant reserves were 12 million tons.