

LEAD

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

Domestic Production and Use: The value of recoverable mined lead in 1999, based on the average U.S. producer price, was \$500 million. Seven lead mines in Missouri plus lead-producing mines in Alaska, Colorado, Idaho, and Montana yielded most of the total. Primary lead was processed at two smelter-refineries in Missouri and a smelter in Montana. Of the 28 plants that produced secondary lead, 16 had annual capacities of 15,000 tons or more and accounted for more than 98% of secondary production. Lead was consumed at about 170 manufacturing plants. The transportation industries were the principal users of lead, consuming 76% of it for batteries, fuel tanks, solder, seals, bearings and wheel weights. Electrical, electronic, communications uses (including batteries), ammunition, television glass, construction (including radiation shielding), and protective coatings accounted for approximately 20% of consumption. The balance was used in ballast and counterweights, ceramics and crystal glass, tubes and containers, type metal, foil, wire, and specialized chemicals.

Salient Statistics—United States:	1995	1996	1997	1998	1999^e
Production: Mine, lead in concentrates	394	436	459	493	520
Primary refinery	374	326	343	337	350
Secondary refinery, old scrap	963	1,030	1,040	1,060	1,050
Imports for consumption, lead in concentrates	3	7	18	33	30
Exports, lead in concentrates	66	60	42	72	70
Imports for consumption, refined metal, wrought and unwrought	271	278	272	275	300
Exports, refined metal, wrought and unwrought	57	61	53	40	35
Shipments from Government stockpile excesses, metal	34	39	26	50	55
Consumption: Reported	1,560	1,540	1,620	1,630	1,700
Apparent	1,570	1,630	1,610	1,700	1,750
Price, average, cents per pound:					
North American Producer	42.3	48.8	46.5	45.3	44
London Metal Exchange	28.6	35.1	28.3	24.0	23
Stocks, metal, producers, consumers, yearend	94	80	101	88	65
Employment: Mine and mill (peak), number	1,200	1,200	1,200	1,200	1,100
Primary smelter, refineries	600	500	450	450	450
Secondary smelters, refineries	1,800	1,800	1,800	1,800	1,700
Net import reliance ¹ as a percent of apparent consumption	17	17	14	18	20

Recycling: About 1.1 million tons of secondary lead was produced, an amount equivalent to 68% of domestic lead consumption. Nearly all of it was recovered from old (post-consumer) scrap. About 1.0 million tons (equivalent to 62% of domestic lead consumption) was recovered from used batteries alone.

Import Sources (1995-98): Lead in concentrates: Peru, 37%; Canada, 20%; Australia, 15%; Mexico, 8%; and other, 20%. Metal, wrought and unwrought: Canada, 69%; Mexico, 23%; Peru, 5%; and other, 3%. Total lead content: Canada, 67%; Mexico, 22%; Peru, 7%; Australia, 1%; and other, 3%.

Tariff: Item	Number	Normal Trade Relations² 12/31/99
Unwrought (refined)	7801.10.0000	2.5% ad val.

Depletion Allowance: 23% (Domestic), 15% (Foreign).

Government Stockpile:

Material	Stockpile Status—9-30-99³				
	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 1999	Disposals FY 1999
Lead	251	13	251	54	54

LEAD

Events, Trends, and Issues: During 1999, the price for lead decreased in the U.S. and world markets. The average North American Producer and London Metal Exchange (LME) prices for the first 9 months of the year were about 3% and 4%, respectively, below the averages for 1998. Despite a continued demand for lead, particularly in the North American market, overall market softness remained during 1999 owing to an increase in exports of lead concentrates from China to markets in industrialized countries and to an increase in the level of LME stocks. U.S. mine production and primary refinery production increased by about 5% and 4%, respectively, while secondary refinery production declined by about 1%. One mine was permanently closed in July as a result of declining reserves and falling market prices for lead. A major secondary smelter was closed indefinitely at the end of October, pending improvements in the price of lead. U.S. apparent consumption of lead increased, particularly owing to the increased demand for replacement batteries as warmer temperatures persisted and automotive-battery failures increased during the summer months. In addition, demand for industrial-type stationary and traction batteries continued to grow.

Production and shipments of lead concentrates were begun during the year at a new polymetallic mine in Spain. Mining and milling also were resumed at a mine in Spain, following the closure of operations in April 1998 when a tailings dam failure resulted in the flooding of a significant portion of the neighboring land. A major Sardinian primary lead-zinc complex was sold during 1999, completing a sales process that had lasted nearly 3 years.

The International Lead and Zinc Study Group at its 44th Session in Paris during October projected world demand for lead to increase by 2.6% to 6.2 million tons in 1999. Demand for lead increased in Asia as several countries began a noticeable economic recovery. European demand was expected to remain at a level near that of 1998. Only a small surplus of refined lead was expected in the worldwide market in 1999 as production increases were anticipated in several countries, including Australia, Belgium, China, and Kazakhstan, more than offsetting expected production declines in Canada, Mexico, and some eastern European countries.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves ⁴	Reserve base ⁴
	1998	1999 ^e		
United States	493	520	6,500	20,000
Australia	618	630	17,000	36,000
Canada	189	160	2,300	12,000
China	556	560	9,000	30,000
Kazakhstan	30	40	2,000	2,000
Mexico	175	130	1,000	2,000
Morocco	76	90	500	1,000
Peru	260	270	2,000	3,000
South Africa	84	80	2,000	3,000
Sweden	140	120	500	1,000
Other countries	479	440	21,000	33,000
World total (may be rounded)	3,100	3,040	64,000	143,000

World Resources: In recent years, significant lead resources have been demonstrated in association with zinc and/or silver or copper in the United States (Alaska), Australia, Canada, China, Ireland, Mexico, Peru, and Portugal. Identified lead resources of the world total more than 1.5 billion tons.

Substitutes: Substitution of plastics has reduced the use of lead in building construction, electrical cable covering, cans, and containers. Aluminum, tin, iron, and plastics compete with lead in other packaging and protective coatings, and tin has replaced lead in solder for new or replacement potable water systems in the United States.

^eEstimated.

¹Defined as imports - exports + adjustments for Government and industry stock changes.

²No tariff for Mexico and Canada.

³See Appendix B for definitions.

⁴See Appendix C for definitions.