

LEAD

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

Domestic Production and Use: The value of recoverable mined lead in 1998, based on the average U.S. producer price, was \$440 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 29 plants that produced secondary lead, 17 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, and bearings. 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 weights, ceramics and crystal glass, tubes and containers, type metal, foil, wire, and specialized chemicals.

Salient Statistics—United States:		1994	1995	1996	1997	1998^e
Production:	Mine, lead in concentrates	370	394	436	459	460
	Primary refinery:					
	From domestic ore	328	374	326	343	330
	From imported materials ¹	23	W	W	W	W
	Secondary refinery, old scrap	877	963	1,030	1,040	1,030
	Imports for consumption, lead in concentrates	1	3	7	18	25
	Exports, lead in concentrates	39	66	60	42	20
	Imports for consumption, refined metal, wrought and unwrought	237	271	278	272	310
	Exports, refined metal, wrought and unwrought	54	57	61	53	30
	Shipments from Government stockpile excesses, metal	65	34	39	26	45
Consumption:	Reported	1,450	1,560	1,540	1,600	1,700
	Apparent	1,490	1,570	1,630	1,610	1,720
Price, average, cents per pound:						
	North American Producer	37.2	42.3	48.8	46.5	45
	London Metal Exchange	24.8	28.6	35.1	28.3	25
	Stocks, metal, producers, consumers, yearend	78	94	80	101	65
Employment:	Mine and mill (peak), number	1,300	1,200	1,200	1,200	1,200
	Primary smelter, refineries	600	600	500	450	450
	Secondary smelters, refineries	1,800	1,800	1,800	1,800	1,800
Net import reliance ² as a percent of apparent consumption		19	17	17	14	21

Recycling: About 1.1 million tons of secondary lead was produced, an amount equivalent to 64% of domestic lead consumption. Nearly all of it was recovered from old (post-consumer) scrap. About 1.0 million tons (equivalent to 58% of domestic lead consumption) was recovered from used batteries alone.

Import Sources (1994-97): Lead in concentrates: Australia, 24%; Canada, 19%; Mexico, 18%; Peru, 13%; and other, 26%. Metal, wrought and unwrought: Canada, 70%; Mexico, 21%; Peru, 7%; and other, 2%. Total lead content: Canada, 69%; Mexico, 21%; Peru, 7%; Australia, 1%; and other, 2%.

Tariff: Item	Number	Normal Trade Relations (NTR)³	Non-NTR⁴
		12/31/98	12/31/98
Unwrought (refined)	7801.10.0000	2.7% ad val.	10.0% ad val.

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

Government Stockpile:

Material	Stockpile Status—9-30-98⁵				Disposals FY 1998
	Uncommitted inventory	Committed inventory	Authorized for disposal FY 1998	Disposal plan	
Lead	306	17	306	54	54

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Events, Trends, and Issues: During 1998, the price for lead decreased in the U.S. and world markets. The average North American Producer and London Metal Exchange prices for the first 9 months of the year were about 2% and 13%, respectively, below the averages for 1997. Despite a continued demand for lead in the North American and European markets, overall market softness remained during 1998 owing to increasing instability in the Asian economies. U.S. mine production remained unchanged from that of 1997, while primary and secondary refinery production declined by about 4% and 1%, respectively. Significant consolidation of the primary and secondary lead industries in the United States occurred during the year as a result of the sale of one company's primary lead business to its principal U.S. competitor and the sale of several secondary refineries and lead-acid battery manufacturing plants to existing U.S. lead companies. U.S. apparent consumption of lead increased, particularly owing to the increased demand for replacement batteries as warmer temperatures persisted, causing automotive-battery failures to increase during the summer months. In addition, demand for industrial-type stationary and traction batteries continued to grow.

Production and shipments of lead and zinc concentrates were begun during the year at new mines in Australia and Ireland, and production was resumed at a mine in Tunisia following its purchase by a Canadian mining company. A major Canadian mine, however, was forced to close temporarily as a result of low metal prices, and a recently opened lead-zinc mine in Spain was closed most of the year as a result of the failure of a tailings dam that flooded a significant portion of the neighboring land.

The International Lead and Zinc Study Group, at its 43rd Session in Marrakech, Morocco, in October, projected world demand for lead to increase by 0.5% to 6.05 million tons in 1998. European demand was expected to remain fairly steady while the demand for lead in China was anticipated to rise by about 4%. A moderate decline in refined lead production was expected to result in a relatively close balance between supply and demand for the year.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves⁶	Reserve base⁶
	<u>1997</u>	<u>1998^e</u>		
United States	459	460	6,500	20,000
Australia	531	590	18,000	33,000
Canada	186	190	3,500	12,000
China	650	600	9,000	30,000
Kazakhstan	35	40	2,000	2,000
Mexico	175	170	1,000	2,000
Morocco	77	70	500	1,000
Peru	258	250	2,000	3,000
South Africa	84	90	2,000	3,000
Sweden	100	100	500	1,000
Other countries	<u>455</u>	<u>520</u>	<u>21,000</u>	<u>33,000</u>
World total	3,010	3,080	66,000	140,000

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, India, Mexico, Pakistan, and South Africa. 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. W Withheld to avoid disclosing company proprietary data; included with "From domestic ore."

¹Included in imports for calculating net import reliance (see footnote 2).

²Defined as imports - exports + adjustments for Government and industry stock changes.

³No tariff for Mexico and Canada.

⁴See Appendix B.

⁵See Appendix C for definitions.

⁶See Appendix D for definitions.