LITHIUM

(Data in metric tons of contained lithium, unless noted)

Domestic Production and Use: The United States was the largest producer and consumer of lithium minerals and compounds worldwide. The value of domestic lithium production was estimated to be about $115 million in 1995. Two companies produced lithium compounds for domestic consumption as well as for export to other countries.

The use of lithium compounds in ceramics, glass, and primary aluminum production represented more than 60% of estimated domestic consumption. Other major end uses for lithium were in the manufacture of lubricants and greases and synthetic rubber production.

Salient Statistics—United States:	1991	1992	1993	1994	1995[e]
Production	W	W	W	W	W
Imports for consumption	590	770	810	851	1,000
Exports	2,400	2,100	1,700	1,700	2,000
Consumption: Apparent	W	W	W	W	W
Estimated[1]	2,600	2,300	2,300	2,500	2,500
Price, yearend, dollars per kilogram:					
Lithium carbonate	4.21	4.32	4.21	4.41	4.60
Lithium hydroxide, monohydrate	5.37	5.53	5.71	5.62	5.90
Stocks, producer, yearend	W	W	W	W	W
Employment, mine and mill[e]	230	230	230	230	230
Net import reliance[2] as a percent of apparent consumption	E	E	E	E	E

Recycling: Insignificant.

Import Sources (1991-94): Chile, 98%; and other, 2%.

Tariff: Item	Number	Most favored nation (MFN) 12/31/95	Non-MFN[3] 12/31/95
Other alkali metals	2805.19.0000	6.4% ad val.	25% ad val.
Lithium oxide and hydroxide	2825.20.0000	3.7% ad val.	25% ad val.
Lithium carbonate:			
U.S.P. grade	2836.91.0010	3.7% ad val.	25% ad val.
Other	2836.91.0050	3.7% ad val.	25% ad val.

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

Government Stockpile: None.

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LITHIUM

Events, Trends, and Issues: The Department of Energy (DOE) sold 41 million kilograms of lithium hydroxide monohydrate, material that was excess from the thermonuclear weapons programs of the 1950's and 1960's. Two U.S. companies purchased the material and will receive shipments during the next 6 years. Up to 30% of the stocks will be available on the open market at the established contract price for 6 months. The remainder of the 30% will be purchased at the end of the period by the two companies under terms of the contract.

One buyer was one of the two domestic lithium producers. The other was a company based in California that recycles lithium batteries at its Trail, British Columbia, Canada, plant. The lithium compounds recovered from the batteries are marketed as additives to improve the long-term stability of concrete. The California company also will sell the DOE lithium hydroxide monohydrate as a concrete additive also.

Two new lithium carbonate operations approached completion. A plant in Western Australia was expected to begin production of lithium carbonate from spodumene ore by yearend. A U.S. company continued development of its brine deposit in Argentina and expected lithium carbonate production to begin early in 1997. Further lithium carbonate projects were under consideration in Canada, Chile, and Zimbabwe.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves[4]	Reserve base[4]
	1994	1995[e]		
United States	W	W	340,000	410,000
Argentina[e]	8	8	NA	NA
Australia[e]	1,700	1,800	370,000	440,000
Bolivia	—	—	—	5,400,000
Brazil	32	32	910	NA
Canada	630	650	180,000	360,000
Chile	2,000	2,100	1,300,000	1,400,000
China[5]	320	320	NA	NA
Namibia[e]	40	40	NA	NA
Portugal	180	180	NA	NA
Russia[5]	800	800	NA	NA
Zaire	—	—	—	320,000
Zimbabwe	380	350	23,000	27,000
World total (rounded)	[6]6,100	[6]6,300	[7]2,200,000	[8]8,400,000

World Resources: The identified lithium resources total 760,000 tons in the United States and 12 million tons in other countries.

Substitutes: Substitutes for lithium compounds are possible in manufactured glass, ceramics, greases, and batteries. Examples are sodic and potassic fluxes in ceramics and glass manufacture; calcium and aluminum soaps as substitutes for stearates in greases; and zinc, magnesium, calcium, and mercury as anode material in primary batteries. Lithium carbonate is not considered an essential ingredient in aluminum potlines. Substitutes for aluminum-lithium alloys as structural materials are composite materials consisting of glass, polymer, or boron fibers in engineering resins.

[e]Estimated. E Net exporter. NA Not available. W Withheld to avoid disclosing company proprietary data.

[1]Based primarily on monitoring at the concentrate stage and assuming a 15% lithium loss during conversion of concentrate into chemicals.

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

[3]See Appendix B.

[4]See Appendix C for definitions.

[5]These estimates denote only an approximate order of magnitude; no basis for more exact estimates is available. Output by China and Russia has never been reported.

[6]Excludes U.S. production.

[7]Excludes Argentina, China, Namibia, Portugal, and Russia.

[8]Excludes Argentina, Brazil, China, Namibia, Portugal, and Russia.