LIME[1]

(Data in thousand metric tons unless otherwise noted)[2]

Domestic Production and Use: In 2004, 20.4 million metric tons (22.5 million short tons) of quicklime and hydrate was produced (excluding commercial hydrators) in 34 States and Puerto Rico. This was an increase of about 1.2 million metric tons compared with that of 2003. Production was valued at about $1.4 billion, an increase of nearly $150 million from 2003 levels. Five companies accounted for more than 70% of the total output. Principal producing States, each with production of more than 1 million tons, were Alabama, Kentucky, Missouri, Nevada, Ohio, Pennsylvania, and Texas. These seven States produced about 13.3 million tons (14.7 million short tons), or 65% of the total output. Major markets for lime were steelmaking, flue gas desulfurization, mining, construction, pulp and paper, precipitated calcium carbonate, and water treatment.

Salient Statistics—United States:	2000	2001	2002	2003	2004[e]
Production[3]	19,600	18,900	17,900	19,200	20,400
Imports for consumption	113	115	157	202	211
Exports	73	96	106	98	86
Consumption, apparent	19,600	19,000	17,900	19,300	20,500
Quicklime average value, dollars per ton at plant	57.50	58.10	59.20	61.30	65.00
Hydrate average value, dollars per ton at plant	85.00	80.70	88.50	84.80	90.00
Stocks, yearend	NA	NA	NA	NA	NA
Employment, mine and plant, number	5,600	5,500	5,400	5,350	5,350
Net import reliance[4] as a percentage of apparent consumption	(5)	(5)	(5)	(5)	(5)

Recycling: Large quantities of lime are regenerated by paper mills. Some municipal water-treatment plants regenerate lime from softening sludge. Quicklime is regenerated from waste hydrated lime in the carbide industry. Data for these sources were not included as production in order to avoid duplication.

Import Sources (2000-03): Canada, 78%; Mexico, 21%; and other, 1%.

Tariff: Item	Number	Normal Trade Relations 12-31-04
Quicklime	2522.10.0000	Free.
Slaked lime	2522.20.0000	Free.
Hydraulic lime	2522.30.0000	Free.
Calcined dolomite	2518.20.0000	3% ad. val.

Depletion Allowance: Limestone produced and used for lime production, 14% (Domestic and foreign).

Government Stockpile: None.

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LIME

Events, Trends, and Issues: In 2003, the National Lime Association (NLA) signed an agreement with the U.S. Department of Energy to reduce voluntarily carbon dioxide emissions intensity by 8% between 2002 and 2012. It was understood that the lime industry cannot reduce emissions from the calcination of limestone, so the agreement focused on achieving energy-related reductions in emissions intensity. In response to this agreement, in 2004, NLA members held discussions on a broad array of methods to reduce emissions of carbon dioxide from lime plants, including developing better energy management programs, examining fuel options, and enhancing the efficiency of various operations and equipment, including blasting, fuel grinding, motor/drive use, scrubbers and/or baghouses, and kilns. Presentations also were made to address other methods of reducing emissions (or emissions intensity), such as cogeneration of electrical power, underground injection of carbon dioxide, and collaboration with customers (such as steelmakers) to allow for the sale of lime products that can be manufactured more efficiently.[6, 7]

World Lime Production and Limestone Reserves and Reserve Base:

	Production		Reserves and reserve base[8]
	2003	2004[e]	
United States	19,200	20,400	Adequate for all countries listed.
Austria	2,000	2,000	
Brazil	6,500	6,500	
Canada	2,200	2,250	
China	23,000	23,500	
France	2,500	2,500	
Germany	7,000	6,500	
Iran	2,200	2,000	
Italy[9]	3,000	3,000	
Japan (quicklime only)	7,500	7,400	
Mexico	6,500	6,500	
Poland	1,900	2,000	
Russia	8,000	8,000	
South Africa (sales)	1,600	1,900	
United Kingdom	2,000	2,000	
Other countries	24,900	25,000	
World total (rounded)	120,000	121,000	

World Resources: Domestic and world resources of limestone and dolomite suitable for lime manufacture are adequate.

Substitutes: Limestone is a substitute for lime in many applications, such as agriculture, fluxing, and sulfur removal. Limestone, which contains less reactive material, is slower to react and may have other disadvantages compared with lime depending on the application; however, limestone is considerably less expensive than lime. Calcined gypsum is an alternative material in industrial plasters and mortars. Cement and lime kiln dust and fly ash are potential substitutes for some construction uses of lime. Magnesium hydroxide is a substitute for lime in pH control, and magnesium oxide is a substitute for dolomitic lime as a flux in steelmaking.

[e]Estimated. NA Not available.

[1]Data are for quicklime, hydrated lime, and refractory dead-burned dolomite. Excludes Puerto Rico, unless noted.

[2]To convert metric tons to short tons, multiply metric tons by 1.1023.

[3]Sold or used by producers.

[4]Defined as imports – exports + adjustments for Government and industry stock changes; stock changes are assumed to be zero for apparent consumption and net import reliance calculations.

[5]Less than ½ unit.

[6]National Lime Association, 2003, Lime industry commits to 8% reduction in energy-related CO_2 emissions intensity: Limeitems, v. 68, no. 6, May-June, p. 2.

[7]National Lime Association, 2004, Reducing carbon dioxide—Efficiency and beyond: Limelites, v. 71, no. 1, July-September, p. 2.

[8]See Appendix C for definitions.

[9]Includes hydraulic lime.