

LIME¹

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: In 2012, an estimated 19.5 million tons (21.5 million short tons) of quicklime and hydrate was produced (excluding commercial hydrators), valued at about \$2.3 billion. At yearend, 31 companies were producing lime, which included 21 companies with commercial sales and 10 companies that produced lime strictly for internal use (for example, sugar companies). These companies had 76 primary lime plants (plants operating lime kilns) in 29 States and Puerto Rico. The 4 leading U.S. lime companies produced quicklime or hydrate in 24 States and accounted for about 75% of U.S. lime production. Principal producing States were, in descending order of production, Missouri, Kentucky, and Alabama (each with production of more than 2 million tons), and Ohio, Texas, Pennsylvania, and Nevada (each with production of more than 1 million tons). Major markets for lime were, in descending order of consumption, steelmaking, flue gas desulfurization, water treatment, construction, mining, paper and pulp, and precipitated calcium carbonate.

Salient Statistics—United States:	2008	2009	2010	2011	2012^e
Production ²	19,900	15,800	18,300	19,100	19,500
Imports for consumption	307	422	445	512	484
Exports	174	108	215	231	194
Consumption, apparent	20,000	16,100	18,500	19,400	19,800
Quicklime average value, dollars per ton at plant	89.90	102.00	103.70	107.90	116.00
Hydrate average value, dollars per ton at plant	107.20	126.40	124.70	130.90	139.00
Employment, mine and plant, number	5,400	4,800	5,000	5,100	5,100
Net import reliance ³ as a percentage of apparent consumption	1	2	1	1	1

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 (2008–11): Canada, 88%; Mexico, 11%; and other, 1%.

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

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

Government Stockpile: None.

Events, Trends, and Issues: In 2012, domestic lime production was bolstered by increased steel production, which is the leading market for lime. U.S. steel production was projected to increase by more than 5% compared with that in 2011. This increase in U.S. steel production and the accompanying increase in lime consumption was expected to account for more than one-half of the 2012 lime production increase.

Lime prices increased in 2012, with quicklime prices increasing by more than 7% and hydrate prices increasing by about 6% compared with those in 2011. This continued a trend of substantial annual price increases that began in 2004 in which prices increased by about 5% to 7% per year (2009 being the exception when the price increase was much higher).

A leading North American lime company acquired a regional lime producer based in Wisconsin. The acquisition included two lime plants in Wisconsin (Eden and Green Bay) and one in Michigan (Port Inland) and strengthened the acquiring company's presence in the upper Midwest.

Two leading U.S. lime companies were taking advantage of the increased availability of low-priced natural gas by announcing plans to install gas-fired vertical shaft kilns. This type of kiln is more energy efficient than preheater rotary or straight rotary kilns. In Virginia, two vertical shaft kilns were being installed to replace rotary kilns at a plant that was idle during 2012. Plans were announced to install a vertical shaft kiln as a third kiln at Pennsylvania's leading lime plant, which would increase the plant's capacity by 25%.

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World Lime Production and Limestone Reserves:

	Production		Reserves ⁴
	2011	2012 ^e	
United States	19,100	19,500	Adequate for all countries listed.
Australia	2,000	2,000	
Belgium	2,000	2,000	
Brazil	7,700	7,700	
Canada	1,960	2,000	
China	200,000	210,000	
France	3,900	3,900	
Germany	7,000	6,800	
India	15,000	15,000	
Iran	2,800	2,800	
Italy ⁵	6,200	6,200	
Japan (quicklime only)	9,000	8,000	
Korea, Republic of	3,900	3,900	
Mexico	6,400	6,400	
Poland	1,800	2,000	
Romania	2,000	2,000	
Russia	8,200	8,200	
South Africa (sales)	1,400	1,400	
Spain	2,100	2,100	
Turkey (sales)	4,500	4,500	
Ukraine	4,250	3,900	
United Kingdom	1,500	1,600	
Vietnam	1,600	1,600	
Other countries	<u>16,700</u>	<u>17,000</u>	
World total (rounded)	331,000	340,000	

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, cement kiln dust, fly ash, and lime kiln dust 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.

^eEstimated.

¹Data are for quicklime, hydrated lime, and refractory dead-burned dolomite. Includes Puerto Rico.

²Sold or used by producers.

³Defined as imports – exports.

⁴[See Appendix C for resource/reserve definitions and information concerning data sources.](#)

⁵Includes hydraulic lime.