

**LIME<sup>1</sup>**

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** In 2013, an estimated 19.0 million tons (20.9 million short tons) of quicklime and hydrate was produced (excluding commercial hydrators), valued at about \$2.3 billion. At yearend, 30 companies were producing lime, which included 20 companies with commercial sales and 11 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, Alabama, Ohio, and Texas. 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.

<b>Salient Statistics—United States:</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013<sup>e</sup></b>
Production <sup>2</sup>	15,800	18,300	19,100	18,800	19,000
Imports for consumption	422	445	512	468	400
Exports	108	215	231	212	260
Consumption, apparent	16,100	18,500	19,400	19,100	19,100
Quicklime average value, dollars per ton at plant	102.00	103.70	107.90	115.40	116.00
Hydrate average value, dollars per ton at plant	126.40	124.70	130.90	136.90	138.00
Employment, mine and plant, number	4,800	5,000	5,100	5,100	5,100
Net import reliance <sup>3</sup> as a percentage of apparent consumption	2	1	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 (2009–12):** Canada, 91%; Mexico, 8%; and other, 1%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–13</b>
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:**

Nationally, lime prices appear to have stabilized in 2013, with only small increases expected compared with those in 2012. This breaks the 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).

Companies continued with construction projects in Pennsylvania and Virginia, which involved installation of new natural gas-fired vertical shaft kilns. Low interest rates and low energy prices have provided opportunities for lime companies to add new capacity or replace existing old capacity with natural gas-fired kilns.

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**World Lime Production and Limestone Reserves:**

	Production		Reserves <sup>4</sup>
	2012	2013 <sup>e</sup>	
United States	18,800	19,000	Adequate for all countries listed.
Australia	2,200	2,200	
Belgium	2,400	2,400	
Brazil	8,300	8,500	
Bulgaria	1,500	1,500	
Canada	1,960	1,800	
China	220,000	220,000	
France	3,900	3,900	
Germany	6,670	6,500	
India	15,000	16,000	
Iran	2,800	2,800	
Italy <sup>5</sup>	6,200	6,000	
Japan (quicklime only)	8,200	8,200	
Korea, Republic of	5,200	5,100	
Poland	2,000	1,900	
Romania	2,000	2,000	
Russia	10,500	10,400	
South Africa (sales)	1,500	1,500	
Spain	1,800	1,800	
Turkey (sales)	4,500	4,400	
Ukraine	4,200	4,200	
United Kingdom	1,500	1,600	
Vietnam	1,500	1,600	
Other countries	<u>15,400</u>	<u>17,000</u>	
World total (rounded)	348,000	350,000	

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

**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.

<sup>e</sup>Estimated.

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

<sup>2</sup>Sold or used by producers.

<sup>3</sup>Defined as imports – exports.

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

<sup>5</sup>Includes hydraulic lime.