# LIME[1]

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** In 2005, 20.0 million metric tons (22.5 million short tons) of quicklime and hydrate was produced (excluding commercial hydrators) in 35 States and Puerto Rico. Production was valued at more than $1.5 billion. 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: | 2001 | 2002 | 2003 | 2004 | 2005[e] |
|---|---|---|---|---|---|
| Production[2] | 18,900 | 17,900 | 19,200 | 20,000 | 20,000 |
| Imports for consumption | 115 | 157 | 202 | 232 | 310 |
| Exports | 96 | 106 | 98 | 100 | 130 |
| Consumption, apparent | 19,000 | 17,900 | 19,300 | 20,200 | 20,200 |
| Quicklime average value, dollars per ton at plant | 58.10 | 59.20 | 61.40 | 64.80 | 72.00 |
| Hydrate average value, dollars per ton at plant | 80.70 | 88.50 | 84.80 | 89.80 | 95.00 |
| Stocks, yearend | NA | NA | NA | NA | NA |
| Employment, mine and plant, number | 5,500 | 5,400 | 5,350 | 5,350 | 5,300 |
| Net import reliance[3] as a percentage of apparent consumption | ([4]) | ([4]) | ([4]) | 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 (2001-04):** Canada, 73%; Mexico, 26%; and other, 1%.

| Tariff: Item | Number | Normal Trade Relations 12-31-05 |
|---|---|---|
| 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.

**Events, Trends, and Issues:** Carmeuse Lime announced plans to improve its production and distribution capabilities by restarting an idle lime kiln at its Black River plant in Kentucky, constructing a new hydrating plant and distribution terminal in South Carolina, and upgrading several existing hydrating plants.[5] In addition, the company announced that capacity improvements at other Carmeuse plants allowed the cessation of production at its Hanover plant in Pennsylvania. The plant will be idled and could be restarted if market demand exceeds the company's supply capacity.[6] Oglebay Norton Co. announced that its wholly owned subsidiary O-N Minerals (formerly Global Stone Corp.) signed an agreement with Western Lime Corp. (West Bend, WI), whereby Western Lime will lease land at O-N Minerals' Port Inland, MI, site and construct a 180,000-metric-ton-per-year lime plant. The plant will produce high-calcium lime for environmental and industrial markets and is expected to operational in 2007.[7] United States Lime & Minerals, Inc. reported that it had entered into a contract to construct a third kiln at its Arkansas Lime Co. plant in Batesville, AR. The project also will include crushing and stone-handling enhancements plus additional product silos and loading facilities.[8] Graymont (PA) Inc. started up its new preheater rotary kiln at its Pleasant Gap, PA, plant in October. A new hydrating plant, additional lime storage, and new loading facilities were also part of the project.[9]

Lime prices continued to rise primarily owing to increased energy costs. Lime companies have announced higher product prices to compensate for rising prices for kiln fuels such as coal, petroleum coke, and natural gas, as well as transportation fuels.

Prepared by **M. Michael Miller [(703) 648-7716, mmiller1@usgs.gov, fax: (703) 648-7757]**

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**World Lime Production and Limestone Reserves and Reserve Base:**

| | Production 2004 | Production 2005[e] | Reserves and reserve base[10] |
|---|---|---|---|
| United States | 20,000 | 20,000 | Adequate for all countries listed. |
| Austria | 2,000 | 2,000 | |
| Brazil | 6,500 | 6,500 | |
| Canada | 2,200 | 2,300 | |
| China | 23,500 | 25,000 | |
| France | 3,000 | 3,000 | |
| Germany | 6,700 | 6,700 | |
| Iran | 2,200 | 2,200 | |
| Italy[11] | 3,000 | 3,000 | |
| Japan (quicklime only) | 7,950 | 8,000 | |
| Mexico | 5,700 | 5,800 | |
| Poland | 2,000 | 2,000 | |
| Russia | 8,000 | 8,000 | |
| South Africa (sales) | 1,500 | 1,600 | |
| United Kingdom | 2,000 | 2,000 | |
| Other countries | 29,800 | 30,000 | |
| World total (rounded) | 126,000 | 128,000 | |

**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]Sold or used by producers.

[3]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.

[4]Less than ½ unit.

[5]Carmeuse Lime, 2005, Carmeuse Lime announces plans to upgrade its lime production and distribution network: Pittsburgh, PA, Carmeuse Lime press release, May 5, 1 p.

[6]Carmeuse Lime, 2005, Carmeuse Lime announces the closure of lime production at its Hanover, PA facility: Pittsburgh, PA, Carmeuse Lime press release, June 24, 1 p.

[7]Oglebay Norton Co., 2005, Oglebay Norton announces new lime plant, sale of vessel, and hiring of investment banker to explore sale of marine assets: Cleveland, OH, Oglebay Norton Co. press release, October 6, 2 p.

[8]United States Lime & Minerals, Inc., 2005, United States Lime & Minerals reports third quarter 2005 results: Dallas, TX, United States Lime & Minerals, Inc. press release, October 27, 3 p.

[9]Steve Boucher, Graymont Ltd., written commun., November 3, 2005.

[10]See Appendix C for definitions.

[11]Includes hydraulic lime.