

LIME¹

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: In 2020, an estimated 16 million tons of quicklime and hydrate was produced (excluding independent commercial hydrators²), valued at about \$2.2 billion. At yearend, 28 companies were producing lime, which included 18 companies with commercial sales and 10 companies that produced lime strictly for internal use (for example, sugar companies). These companies had 74 primary lime plants (plants operating quicklime kilns) in 28 States and Puerto Rico. One lime plant was idle in 2020. Five of the 28 companies operated only hydrating plants in 9 States. In 2020, the five leading U.S. lime companies produced quicklime or hydrate in 22 States and accounted for about 72% of U.S. lime production. Principal producing States were, in alphabetical order, Alabama, Kentucky, Missouri, Ohio, and Texas. Major markets for lime were, in descending order of consumption, steelmaking, chemical and industrial applications (such as the manufacture of fertilizer, glass, paper and pulp, and precipitated calcium carbonate, and in sugar refining), flue gas treatment, construction, water treatment, and nonferrous mining.

Salient Statistics—United States:

	2016	2017	2018	2019	2020^e
Production ³	17,300	17,600	18,000	16,900	16,000
Imports for consumption	376	367	370	342	310
Exports	329	391	424	347	260
Consumption, apparent ⁴	17,300	17,600	18,000	16,900	16,000
Quicklime average value, dollars per ton at plant	119.7	120.8	125.2	128.3	128
Hydrate average value, dollars per ton at plant	145.4	147.1	151.6	154.6	154
Employment, mine and plant, number	NA	NA	NA	NA	NA
Net import reliance ⁵ as a percentage of apparent consumption	<1	E	E	E	<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 (2016–19): Canada, 92%; Mexico, 7%; and other, 1%.

Tariff:	Item	Number	Normal Trade Relations 12–31–20
	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 2020, domestic lime production was estimated to have decreased by 5% from that of 2019. A decline in lime production was a result of plants temporarily closing as a result of the global COVID-19 pandemic. In San Bernardino County, CA, plans were underway to construct a new quicklime plant using crushed limestone transported to the site from a nearby quarry. In Texas, one company planned to expand lime production capacity at two separate plants by 2021. One plant was adding a new vertical kiln to meet increasing steel industry demand for high-purity dolomitic lime products. The other plant was adding a new energy-efficient lime kiln to produce high-calcium lime products to meet the increasing demand from the steel and construction industries. The total number of operating quicklime plants was 73 in 2020 along with 10 hydrating plants. Hydrated lime is a dry calcium hydroxide powder made from reacting quicklime with a controlled amount of water in a hydrator. It is used in chemical and industrial, construction, and environmental applications.

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World Lime Production and Limestone Reserves:

	Production ⁶		Reserves ⁷
	2019	2020 ^e	
United States	16,900	16,000	Adequate for all countries listed.
Australia	1,980	2,000	
Belgium ⁸	1,560	1,500	
Brazil	8,100	8,100	
Bulgaria	1,460	1,500	
Canada (shipments)	1,710	1,700	
China	310,000	300,000	
France	2,600	2,600	
Germany	7,100	7,100	
India	16,000	16,000	
Iran	3,450	3,300	
Italy ⁸	3,500	3,500	
Japan (quicklime only)	7,320	7,300	
Korea, Republic of	5,200	5,200	
Malaysia	1,600	1,600	
Poland (hydrated and quicklime)	2,700	2,700	
Romania	1,960	1,900	
Russia (industrial and construction)	11,000	11,000	
Slovenia	1,190	1,100	
South Africa	1,300	1,300	
Spain	1,800	1,800	
Turkey	4,600	4,600	
Ukraine	2,250	2,200	
United Kingdom	1,500	1,500	
Other countries	<u>15,500</u>	<u>15,000</u>	
World total (rounded)	432,000	420,000	

World Resources:⁷ 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.

^eEstimated. E Net exporter. NA Not available.

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

²To avoid double counting quicklime production, excludes independent commercial hydrators that purchase quicklime for hydration.

³Sold or used by producers.

⁴Defined as production + imports – exports. Includes some double counting based on nominal, undifferentiated reporting of company export sales as U.S. production.

⁵Defined as imports – exports.

⁶Only countries that produced 1 million tons of lime or more are listed separately.

⁷See Appendix C for resource and reserve definitions and information concerning data sources.

⁸Includes hydraulic lime.