

LIME¹

(Data in thousand metric tons unless otherwise specified)

Domestic Production and Use: In 2023, an estimated 17 million tons of quicklime and hydrated lime was produced (excluding independent commercial hydrators²), valued at about \$2.6 billion. Lime was produced by 28 companies—18 with commercial sales and 10 that produced lime strictly for internal use (for example, sugar companies). These companies had 73 primary lime plants (plants operating quicklime kilns) in 28 States and Puerto Rico. One primary lime plant was idle in 2023. Of the 28 companies, 5 operated only hydrating plants in nine States. In 2023, the five leading U.S. lime companies produced quicklime or hydrated in 22 States and accounted for about 80% of U.S. lime production. Principal producing States were Alabama, 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-metal mining.

Salient Statistics—United States:

	2019	2020	2021	2022	2023^e
Production ^{2, 3}	16,900	15,800	16,800	17,000	17,000
Imports for consumption	342	308	323	354	340
Exports	347	266	335	303	350
Consumption, apparent ⁴	16,900	15,900	16,800	17,000	17,000
Price, average value, dollars per metric ton at plant:					
Quicklime	128.3	131.4	133.4	151.3	155
Hydrated	154.6	156.0	159.6	183.1	185
Net import reliance ⁵ as a percentage of apparent consumption	E	<1	E	<1	E

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 to avoid double counting.

Import Sources (2019–22): Canada, 86%; Mexico, 10%; and other, 4%.

Tariff:	Item	Number	Normal Trade Relations 12–31–23
	Calcined dolomite	2518.20.0000	3% ad valorem.
	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 2023, domestic lime production was estimated to be unchanged from that in 2022. However, some of the lime producers have increased product pricing owing to increased costs of production. Several companies were planning to accelerate their decarbonization efforts in the production of lime. In 2023, a total of 73 quicklime plants were in operation 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.

LIME

World Lime Production and Limestone Reserves:

	Production ⁶		Reserves ⁷
	2022	2023 ^e	
United States	17,000	17,000	Adequate for all countries with listed production.
Australia	1,990	2,000	
Belgium ⁸	1,710	1,200	
Brazil	8,300	8,300	
Bulgaria	1,420	1,400	
Canada (shipments)	1,680	1,700	
China	310,000	310,000	
France	2,500	3,000	
Germany	5,900	5,900	
India	16,000	16,000	
Iran	4,000	4,000	
Italy ⁸	3,500	3,500	
Japan (quicklime only)	6,240	6,200	
Korea, Republic of	5,100	5,100	
Malaysia	1,500	1,500	
Poland (hydrated and quicklime)	1,800	1,800	
Romania	1,100	1,100	
Russia (industrial and construction)	11,400	11,000	
Slovenia	1,100	1,100	
South Africa	1,070	1,200	
Spain	1,700	1,700	
Turkey	4,600	4,600	
Ukraine	2,600	2,000	
United Kingdom	1,400	1,400	
Other countries	15,400	15,000	
World total (rounded)	430,000	430,000	

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.

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 or more of lime are listed separately.

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

⁸Includes hydraulic lime.