ASBESTOS

(Data in metric tons unless otherwise noted)

Domestic Production and Use: The last U.S. producer of asbestos ceased operations in 2002 as a result of the decline in domestic and international asbestos markets associated with health and liability issues. The United States has since been wholly dependent on imports to meet manufacturing needs. All the asbestos fiber currently imported into and used within the United States consists of chrysotile. In 2021, domestic consumption of chrysotile was estimated to be 320 tons, and all imports originated from Brazil, based on data available through July. The chloralkali industry, which uses chrysotile to manufacture nonreactive semipermeable diaphragms that prevent chlorine generated at the anode of an electrolytic cell from reacting with sodium hydroxide generated at the cathode, has accounted for 100% of asbestos fiber consumption since at least 2015. In addition to asbestos fiber, a small, but unknown, quantity of asbestos is imported annually within manufactured products. According to the U.S. Environmental Protection Agency (EPA), the only imported items known to contain asbestos are brake blocks for use in the oil industry, preformed gaskets used in the exhaust system of a specific type of utility vehicle, rubber sheets for gasket fabrication (primarily used to create a chemical containment seal in the production of titanium dioxide), and some vehicle friction products.[1]

Salient Statistics—United States:[2]	**2017**	**2018**	**2019**	**2020**	**2021**[e]
Imports for consumption[3]	332	681	172	305	[4]100
Exports[5]	—	—	—	—	—
Consumption, estimated[6]	520	500	450	450	320
Price, average U.S. customs unit value, dollars per ton	1,870	1,670	1,570	2,110	2,000
Net import reliance[7] as a percentage of estimated consumption	100	100	100	100	100

Recycling: None.

Import Sources (2017–20): Brazil, 80%; and Russia, 20%.

Tariff: **Item**	**Number**	**Normal Trade Relations 12–31–21**
Crocidolite	2524.10.0000	Free.
Amosite	2524.90.0010	Free.
Chrysotile:		
Crudes	2524.90.0030	Free.
Milled fibers, group 3 grades	2524.90.0040	Free.
Milled fibers, group 4 and 5 grades	2524.90.0045	Free.
Other	2524.90.0055	Free.
Other, asbestos	2524.90.0060	Free.

Depletion Allowance: 22% (domestic), 10% (foreign).

Government Stockpile: None.

Events, Trends, and Issues: Consumption of asbestos fiber in the United States has decreased during the past several decades, falling from a record high of 803,000 tons in 1973 to approximately 520 tons or less in each year since 2017. This decline has taken place as a result of health and liability issues associated with asbestos use, leading to the displacement of asbestos from traditional domestic markets by substitutes, alternative materials, and new technology. The chloralkali industry is the only remaining domestic consumer of asbestos in mineral form. Asbestos diaphragms are used in at least 11 chloralkali plants in the United States and account for about one-third of domestic chlorine production.

The Frank R. Lautenberg Chemical Safety for the 21st Century Act, which amended the Toxic Substances Control Act of 1976 (TSCA), was signed into law in 2016. The legislation granted the EPA greater authority to evaluate the hazards posed by new chemicals as well as those already in the marketplace. The EPA issued the final risk evaluation report for chrysotile in 2020. The agency determined that the disposal, processing, and (or) use of chrysotile in the chloralkali industry and in all chrysotile-containing manufactured products that are currently imported into the United States (oil industry brake blocks, sheet and other gaskets, and some vehicle friction products) present unreasonable risks to human health. As required by the TSCA, the EPA will propose and finalize actions to address these risks by yearend 2022. The new regulations could include limitations or prohibitions on the disposal, distribution in commerce, manufacture, processing, or use of chrysotile.[1]

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ASBESTOS

Estimated worldwide consumption of asbestos fiber decreased from approximately 2 million tons in 2010 to roughly 1.2 million tons per year in the past several years. Asbestos-cement products, such as corrugated roofing tiles, pipes, and wall panels, are expected to continue to be the leading global market for asbestos.

In Brazil, a comprehensive national ban on asbestos was enacted in November 2017. A judicial injunction allowed the only asbestos producer in the country to continue operating until February 2019, when production ceased. In July 2019, the government of the State of Goias passed a law that authorized the extraction of asbestos in the State for export purposes, and ore processing was restarted in February 2020. In August 2021, the Federal Court of Uruacu ruled that the company must immediately suspend mining, processing, and export of asbestos.

At the former King Mine in Mashava, Zimbabwe, asbestos production from old tailings commenced in 2019. As of March 2020, the company had completed dewatering of the mining shafts and was in the process of selling real estate assets to fund the restart of mining operations and dewatering an additional asbestos mine in Zvishvane. At full capacity, the King Mine was expected to produce 75,000 tons per year of asbestos. Updates on the status of these projects were not available as of September 2021.

World Mine Production and Reserves:

	Mine production[e]		
	2020	2021	Reserves[8]
United States	—	—	Small
Brazil	[9]71,200	110,000	11,000,000
China	120,000	120,000	95,000,000
Kazakhstan	[10]227,000	250,000	Large
Russia	720,000	700,000	110,000,000
Zimbabwe	8,000	10,000	Large
World total (rounded)	1,100,000	1,200,000	Large

World Resources:[8] Reliable evaluations of global asbestos resources have not been published recently, and available information was insufficient to make accurate estimates for many countries. However, world resources are large and more than adequate to meet anticipated demand in the foreseeable future. Resources in the United States are composed mostly of short-fiber asbestos for which use in asbestos-based products is more limited than long-fiber asbestos.

Substitutes: Numerous materials substitute for asbestos. Substitutes include calcium silicate, carbon fiber, cellulose fiber, ceramic fiber, glass fiber, steel fiber, wollastonite, and several organic fibers, such as aramid, polyethylene, polypropylene, and polytetrafluoroethylene. Several nonfibrous minerals or rocks, such as perlite, serpentine, silica, and talc, are also considered to be possible asbestos substitutes for products in which the reinforcement properties of fibers are not required. Membrane cells and mercury cells are alternatives to asbestos diaphragms used in the chloralkali industry.

[e]Estimated. — Zero.

[1]Source: U.S. Environmental Protection Agency, 2020, Risk evaluation for asbestos, part I—Chrysotile asbestos: Washington, DC, EPA Document # EPA-740-R1-8012, December, 352 p.

[2]Includes asbestos fiber (chrysotile) only; excludes asbestos contained in manufactured products.

[3]Additional chrysotile imports were reported by the U.S. Census Bureau in some years, but existing asbestos bans and bill of lading information from a commercial trade database suggest that some shipments were misclassified.

[4]According to the U.S. Census Bureau, imports of chrysotile totaled 41 tons through July. Final 2021 imports may differ significantly from the provided estimate because chrysotile imports typically do not follow a predictable pattern throughout the year.

[5]Exports of asbestos reported by the U.S. Census Bureau were 143 tons in 2017, 235 tons in 2018, 2 tons in 2019, 1 ton in 2020, and 127 tons through July in 2021. These shipments likely consisted of materials misclassified as asbestos, reexports, and (or) waste products because the United States no longer mines asbestos.

[6]To account for year-to-year fluctuations in chrysotile imports owing to cycles of companies replenishing and drawing down stockpiles, consumption is estimated as a 5-year rolling average of imports for consumption. Information regarding the quantity of industry stocks was unavailable.

[7]Defined as imports – exports. The United States has been 100% net import reliant since 2002. All consumption of asbestos was from imports and unreported inventories.

[8]See Appendix C for resource and reserve definitions and information concerning data sources.

[9]Asbestos production permitted for export purposes only. Value shown is reported country exports.

[10]Reported.

U.S. Geological Survey, Mineral Commodity Summaries, January 2022