



# 2015 Minerals Yearbook

---

## TALC AND PYROPHYLLITE [ADVANCE RELEASE]

---

# TALC AND PYROPHYLLITE

By Daniel M. Flanagan

Domestic survey data and tables were prepared by Robin C. Kaiser, statistical assistant, and the world production table was prepared by Lisa D. Miller,<sup>1</sup> international data coordinator.

In 2015, mine production of crude talc in the United States increased by 13% to 687,000 metric tons (t) valued at an estimated \$19.4 million from revised 608,000 t valued at an estimated \$16.7 million during 2014, and the quantity of talc sold rose slightly to 552,000 t valued at an estimated \$93.4 million from revised 551,000 t valued at an estimated \$94 million (table 1). Owing primarily to higher production, U.S. apparent consumption of talc increased by 11% to 803,000 t from revised 726,000 t. Exports of talc in 2015 rose by 8% to 206,000 t valued at \$59.4 million from revised 190,000 t valued at \$55.5 million, and imports increased by 5% to 322,000 t valued at \$109 million from revised 308,000 t valued at \$102 million. Domestic production and sales of pyrophyllite were withheld to avoid disclosing company proprietary data but were estimated to have increased from those of 2014. World production of talc, pyrophyllite, and related materials totaled 8.43 million metric tons (Mt) during 2015, slightly higher than revised 8.37 Mt during the prior year. Considering production of talc (including soapstone and steatite) only, the United States ranked fourth globally, following China, India, and Mexico.

Talc is a hydrous magnesium silicate composed of weakly bonded layers that can easily slide past one another, imparting its distinct slippery feel and low hardness (1 on the Mohs scale). Other properties that make talc useful for commercial applications include chemical inertness, high dielectric strength, high fusion point, high thermal conductivity, low electrical conductivity, and low oil and grease absorption. Talc typically forms by hydrothermal alteration of mafic to ultramafic rocks or by low-grade thermal metamorphism of siliceous dolomites. Within the United States, talc has been primarily mined in Montana, New York, Texas, and Vermont (Deer and others, 1966, p. 227–230; McCarthy and others, 2006, p. 972–974; Tomaino, 2016). Pyrophyllite, a hydrous aluminum silicate, exhibits physical and chemical properties similar to those of talc and, within the United States, has been mined predominantly in North Carolina.

In 1900, the United States produced 83,000 t of talc (including soapstone), and at least 75% of the output was sold as filler for paper manufacture (Pratt, 1902). Use of talc in paint increased during the early 20th century, and by 1930 production rose to 163,000 t, with paint accounting for nearly 50% of domestic sales (Bowles and Stoddard, 1933; Ladoo, 1923, p. 76–79). Production and sales of talc then began a notable upward trend that continued for most of the following five decades, peaking at 1.32 Mt (including pyrophyllite) in 1979 (fig. 1). The creation of talc- and ball-clay-based ceramic formulations in the late 1920s and early 1930s significantly boosted the talc

industry (Emery and Stoddard, 1934); accounting for 1% of talc sales in 1931, ceramics markets increased to 29% in 1973 (Bowles and Stoddard, 1933; Wells, 1976). Other technological advancements that stimulated talc production during this period included the development of micronized talc for paper pitch control and honeycomb cordierite (formed by firing a mixture of talc, kaolin, and alumina) for automotive catalytic converters (McCarthy and others, 2006, p. 981–983). Because talc production and sales were tied to manufacturing and commercial and residential construction activity, the industry was negatively affected by the Great Depression and the numerous short-term recessions that took place since the start of the 20th century.

Talc production and sales began to decrease after 1995 owing to declines in several domestic markets; in 2015, U.S. mine output was 65% of that in 1995 (fig. 1). Some contributing factors to this decline were technological developments that reduced the amount of talc incorporated into ceramic tile; the movement of portions of the domestic ceramics manufacturing industry to countries with lower labor costs; decreased use of oil-based paints, for which talc is ideally suited; decreased paper manufacturing; replacement by chemical agents of some talc used for pitch control; a shift from talc- to corn-starch-based cosmetic products; and increased use of imported talc (McCarthy and others, 2006, p. 981–983; Virta, 2010). In contrast, sales of U.S. talc for plastics rose by more than 85% from 1995 to 2015 (Virta, 1998), primarily as a result of increased use in automobiles, but a significant share of the demand has been met with imported talc. A major reason for the decline in pyrophyllite sales since 1979 was its decreased use in the manufacture of refractory products owing to technological changes and reductions in domestic steelmaking capacity (Roskill Information Services Ltd., 1996, p. 192).

## Production

**Talc.**—Domestic production data were obtained through a voluntary survey of U.S. talc mines conducted by the U.S. Geological Survey (USGS). Survey forms were sent to three companies and responses were received from two. Production and value for the nonrespondent were estimated from previously reported data adjusted by data for other mining operations and mine employment hours reported by the Mine Safety and Health Administration (MSHA).

Three companies mined talc in the United States during 2015, operating five mines in three States. All were open pit mining operations. The producers were, in alphabetical order, American Talc Co. in Texas, Barretts Minerals Inc. (a subsidiary of Minerals Technologies Inc.) in Montana, and Imerys S.A. in Montana and Vermont. CAL-TALC Inc. in California, which had been working from stockpiles in recent years, was idle in 2015. The USGS survey of talc producers previously included

<sup>1</sup>Deceased.

New World Stone Co. in Virginia, but this company was excluded beginning in 2015. New World Stone mines soapstone for dimension stone applications and is included in the canvass of domestic dimension stone producers.

U.S. mine production of crude talc increased by 13% to 687,000 t valued at an estimated \$19.4 million from 608,000 t valued at an estimated \$16.7 million in 2014 (table 1). Montana led all States in the tonnage of talc produced, followed by Texas and Vermont. A portion of the production increases during 2014 and 2015 was likely a recovery from some companies reducing mine production and drawing down stocks in 2012 and 2013.

**Pyrophyllite.**—The Standard Mineral Division of R.T. Vanderbilt Holding Co., Inc. operated two pyrophyllite mines in North Carolina during 2015. Pyrophyllite output was estimated from previously reported data adjusted according to MSHA mine employment hours but was withheld to avoid disclosing company proprietary data; production rose by an estimated 3% in 2015. Standard Industrial Minerals Inc. has a pyrophyllite mine in California but has reported it as idle for the past several years.

## Consumption

The USGS sent survey forms to four companies that operated seven talc mills in four States and one company with a pyrophyllite mill in North Carolina. Three companies responded to the talc survey. Sales for the nonrespondents were estimated using previously reported data adjusted according to responses from other milling operations, trends in consuming industries, and MSHA mill employment hours. The USGS canvass generally excluded plants that primarily processed imported material, but survey forms were sent to and received from one of the companies that processed imported talc at several U.S. operations in 2015.

**Talc.**—Total sales of talc (domestic and export) by U.S. producers were 552,000 t valued at an estimated \$93.4 million in 2015, essentially unchanged from 551,000 t valued at an estimated \$94 million during the prior year (table 1). Sales within the United States decreased slightly during 2015 to 480,000 t from 485,000 t in 2014 (table 2). Ceramics (mainly for catalytic converter bodies, ceramic tile, and sanitaryware) was the leading identified U.S. end use and accounted for 26% of domestic sales, followed by paper (mainly for pitch control), 18%; paint (as a filler and extender), 17%; plastics (as a filler and extender), 13%; roofing (as a bitumen filler and surface coating), 7%; rubber (as a filler and dusting agent), 4%; and cosmetics, 3%. Unclassified end uses accounted for the remainder of U.S. talc sales and included animal feed, construction caulks, food, insecticides, joint compounds, pharmaceuticals, sculpture, and other miscellaneous applications.

Compared with those in 2014, U.S. talc sales during 2015 rose by 38% for rubber, 6% for roofing, and 4% for plastics (table 2). Manufacturing trends that contributed to these increases included 11% growth in U.S. housing starts (U.S. Census Bureau, 2016); a nearly 5% rise in automobile production, where talc is used in plastic components; an increase of 4% in domestic industrial output of rubber products; and 3% growth in the manufacture of plastic products

(Federal Reserve Board, 2016). Sales of talc fell by 11% for cosmetics, 5% for ceramics, 3% for paint, and slightly for paper. The decreases in sales to paint and paper markets corresponded to a 6% decline in domestic industrial output of paint, coatings, and adhesives (Federal Reserve Board, 2016), as well as a slight decrease in paper production (Food and Agriculture Organization of the United Nations, 2016). Although worldwide cosmetics sales grew by nearly 4% in 2015 (L'Oréal, 2016, p. 16), use of talc in this application has been declining since the early 1980s as manufacturers shifted from talc-based to corn-starch-based products. With increased construction activity (ceramic tile and sanitaryware) and automobile production (ceramic bodies for catalytic converters), use of domestic talc in ceramics would have been expected to increase, but trends in specific manufacturing sectors do not always directly correlate to sales trends.

Most of the 322,000 t of imported talc listed in table 4 was not included in the domestic end use data in table 2. An estimated 50% of talc imports were used for manufacturing plastic components. Combining domestic sales by U.S. producers (table 2) with imported talc, major markets in the United States were thought to be, in decreasing order of consumption, plastics, ceramics, paint, paper, roofing, rubber, cosmetics, and other unspecified end uses.

**Pyrophyllite.**—Domestic sales of pyrophyllite were withheld to avoid disclosing company proprietary data but were estimated to have increased by about 10% from those in 2014. Pyrophyllite was used in refractory products, paint, and ceramics, in decreasing order of consumption. Refractory uses likely accounted for more than 50% of domestic sales.

## Prices

In 2015, the unit value of mine-run crude talc was estimated to be \$28 per metric ton, slightly higher than \$27 per ton in 2014, and the estimated unit value of processed talc was \$169 per ton compared with \$171 per ton in 2014 (table 1). The exclusion from the domestic data of high-value cut and sawed talc used for dimension stone applications, such as countertops and fireplaces, contributed to the slightly decreased unit values of crude and processed talc in 2015. Sufficient information was not available to estimate the change in value of any type of pyrophyllite.

The average free alongside ship unit value of all talc exports during 2015 fell slightly to \$289 per metric ton from \$292 per ton in 2014 (table 3). Crushed or powdered (milled) talc that was shipped under Harmonized Tariff Schedule of the United States (HTS) code 2526.20.0000 had an average unit value of \$285 per ton, a slight decrease from \$288 per ton. The average unit value of exports that were not crushed or powdered (unmilled talc) under HTS code 2526.10.0000 also declined slightly to \$544 per ton from \$546 per ton. High unit values for some unmilled talc shipments during 2014 and 2015 indicate that specialty products, such as surface-treated milled talc and (or) consumer talc products, such as talcum powder, also were classified using this HTS code.

The average customs unit value for total talc imports was \$338 per metric ton in 2015 compared with \$331 per ton in 2014 (table 4). The average unit value for imports of unmilled

(not crushed or powdered) talc increased by 27% to \$378 per ton from \$299 per ton because of more low-tonnage deliveries of high-value talc during 2015. As with exports, high unit values of individual shipments suggest that some imports were misclassified and consisted of specialty talc products or talc-based consumer goods. Milled (crushed or powdered) talc had an average customs unit value of \$278 per ton in 2015 and \$287 per ton in 2014, and the average unit value of cut or sawed talc (HTS code 6815.99.2000) was \$1,240 per ton in 2015 compared with \$1,180 per ton during the previous year.

## Foreign Trade

The tonnage of United States talc exports rose by 8% to 206,000 t valued at \$59.4 million in 2015 from 190,000 t valued at \$55.5 million in 2014, primarily owing to an increase of 15% in shipments to Mexico (table 3). Canada (37% of exports by quantity) and Mexico (34%) were the leading destinations for domestic talc, and the remainder was distributed among 53 additional countries. More than 98% of U.S. talc shipments in 2015 consisted of nominally milled material.

U.S. talc imports totaled 322,000 t valued at \$109 million, 5% higher than the 308,000 t valued at \$102 million imported in 2014 (table 4). An increase of 76% in talc deliveries from China (including material transshipped through Hong Kong) accounted for most of the growth. Pakistan was the leading source for imported talc by tonnage, representing 36% of the total, followed by China (30%) and Canada (28%), with the remainder distributed among 24 other countries. Shipments from Pakistan likely included large quantities of talc mined in Afghanistan. About 80% of talc imports was crushed or powdered, 15% was not crushed or powdered, and 5% was cut or sawed. China (75%) and Pakistan (20%) were the predominant sources of the not crushed or powdered talc imports in 2015. Pakistan, Canada, and China accounted for 40%, 31%, and 22%, respectively, of crushed or powdered talc imports, and Canada supplied 52% of cut or sawed imports, followed by China (22%) and Brazil (13%).

## World Review

World production of talc, pyrophyllite, and related materials was estimated to be 8.43 Mt in 2015, slightly more than the 8.37 Mt generated in 2014 (table 5). Brazil, Canada, China, Finland, France, India, Italy, Japan, Mexico, the Republic of Korea, Russia, and the United States collectively accounted for about 90% of the global output. China was the world's leading producer of talc (including soapstone and steatite), followed by, in decreasing order of quantity, India, Mexico, and the United States. The Republic of Korea and Japan were the two leading producers of pyrophyllite. In addition to the countries listed in table 5, Afghanistan likely produced a significant tonnage of talc that was exported via Pakistan, but available information was inadequate to make a reliable estimate of output. In Afghanistan, Amin Karimzai Ltd. had mine production capacity of 400,000 metric tons per year of talc, and talc also was mined through artisanal and small- to medium-scale operations (Hughes, 2013; Renaud, 2015).

## Outlook

Manufacturing sectors that consume talc and pyrophyllite, including motor vehicles; paints, coatings, and adhesives; plastics; and rubber, have mostly increased their output in the years since the 2008–9 recession (Federal Reserve Board, 2016). These trends and projections of continued growth in the U.S. economy (International Monetary Fund, 2016) suggest that sales of talc for automotive body and underhood components (plastics), catalytic converter bodies (ceramics), paint, plastics, and rubber products may continue to rise in 2016. Sales of talc for such items as adhesives, caulks, ceramics (mainly tile), joint compounds, paint, putties, and roofing materials are strongly tied to commercial and residential construction activity. Housing starts for new privately owned units have consistently increased since 2009, implying that sales for construction-related markets may increase during 2016 as well (U.S. Census Bureau, 2016). Global demand for talc is also expected to rise as growth in plastics and automotive ceramics outpaces sales declines for paper and traditional ceramics (Wilson, 2015). Sales of pyrophyllite will likely increase slightly as the economy expands.

## References Cited

- Bowles, Oliver, and Stoddard, B.H., 1933, Talc and soapstone, *in* Nonmetals: U.S. Bureau of Mines Mineral Resources of the United States 1931, v. II, p. 99–110.
- Deer, W.A., Howie, R.A., and Zussman, J., 1966, An introduction to the rock forming minerals: London, United Kingdom, Longman Group Ltd., 528 p.
- Emery, A.H., and Stoddard, B.H., 1934, Talc and ground soapstone: U.S. Bureau of Mines Minerals Yearbook 1934, p. 975–984. (Accessed January 3, 2017, via <https://minerals.usgs.gov/minerals/pubs/usbmyb.html>.)
- Federal Reserve Board, 2016, Data download program—Industrial production and capacity utilization: Washington, DC, Federal Reserve Board, December 14. (Accessed January 10, 2017, via <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=G17>.)
- Food and Agriculture Organization of the United Nations, 2016, FAOSTAT—Forestry production and trade: New York, NY, Food and Agriculture Organization of the United Nations, December 14. (Accessed January 10, 2017, via <http://www.fao.org/faostat/en/#data/FO>.)
- Hughes, Emma, 2013, Afghan-Pakistani talc JV has potential to produce 640,000 tpa: Industrial Minerals, July 2. (Accessed July 12, 2013, via <http://www.indmin.com>.)
- International Monetary Fund, 2016, World economic outlook—Too slow for too long: Washington, DC, International Monetary Fund, April, 208 p. (Accessed June 17, 2016, at <http://www.imf.org/external/pubs/ft/weo/2016/01/>.)
- Ladoo, R.B., 1923, Talc and soapstone—Their mining, milling, products and uses: U.S. Bureau of Mines Bulletin 213, 133 p.
- L'Oréal, 2016, Annual report 2015: Clichy, France, L'Oréal, 60 p.
- McCarthy, E.F., Genco, N.A., and Reade, E.H., Jr., 2006, Talc, *in* Kogel, J.E., Trivedi, N.C., Barker, J.M., and Krukowski, S.T., eds., Industrial minerals and rocks (7th ed.): Littleton, CO, Society for Mining, Metallurgy, and Exploration Inc., p. 971–986.
- Pratt, J.H., 1902, Talc and soapstone: U.S. Geological Survey Mineral Resources of the United States 1901, p. 773–780.
- Renaud, K.M., 2015, The mineral industry of Afghanistan [advance release], *in* Area reports—International—Asia and the Pacific: U.S. Geological Survey Minerals Yearbook 2013, v. III, p. 2.1–2.8. (Accessed January 23, 2017, via <https://minerals.usgs.gov/minerals/pubs/country/asia.html#af>.)
- Roskill Information Services Ltd., 1996, The economics of talc (8th ed.): London, United Kingdom, Roskill Information Services Ltd., 237 p.
- Tomaino, G.P., 2016, Talc and pyrophyllite, *in* Annual review 2015: Mining Engineering, v. 68, no. 7, July, p. 75–78.
- U.S. Census Bureau, 2016, New residential construction—Historical data: Washington, DC, U.S. Census Bureau. (Accessed January 10, 2017, via [http://www.census.gov/construction/nrc/historical\\_data/index.html](http://www.census.gov/construction/nrc/historical_data/index.html).)

Virta, R.L., 1998, Talc and pyrophyllite, *in* Metals and minerals: U.S. Geological Survey Minerals Yearbook 1996, v. I, p. 891–898. (Accessed January 3, 2017, via <https://minerals.usgs.gov/minerals/pubs/commodity/talc/>.)

Virta, R.L., 2010, Talc and pyrophyllite, *in* Metals and minerals [advance release]: U.S. Geological Survey Minerals Yearbook 2009, v. I, p. 75.1–75.9. (Accessed January 3, 2017, via <https://minerals.usgs.gov/minerals/pubs/commodity/talc/>.)

Wells, J.R., 1976, Talc, soapstone, and pyrophyllite, *in* Metals, minerals, and fuels: U.S. Bureau of Mines Minerals Yearbook 1974, v. I, p. 1261–1268. (Accessed January 3, 2017, via <https://minerals.usgs.gov/minerals/pubs/usbmyb.html>.)

Wilson, Ian, 2015, Global talc production and markets: Industrial Minerals, July 22. (Accessed January 19, 2017, via <http://www.indmin.com>.)

## GENERAL SOURCES OF INFORMATION

### U.S. Geological Survey Publications

Historical Statistics for Mineral and Material Commodities in the United States. Data Series 140.

Talc. Ch. in United States Mineral Resources, Professional Paper 820, 1973.

Talc and Pyrophyllite. Ch. in Mineral Commodity Summaries, annual.

Talc Resources of the Conterminous United States. Open-File Report 95–586, 1995.

USGS Study of Talc Deposits and Associated Amphibole Asbestos Within Mined Deposits of the Southern Death Valley Region, California, A. Open-File Report 2004–1092, 2004.

U.S. Talc—Baby Powder and Much More. Fact Sheet 065–00, 2000.

### Other

Ceramic Industry.

Paint and Coatings Industry.

Talc. Ch. in Industrial Minerals and Rocks (7th ed.), Society for Mining, Metallurgy, and Exploration Inc., 2006.

Talc and Pyrophyllite. Ch. in Mineral Facts and Problems, U.S. Bureau of Mines Bulletin 675, 1985.

Talc Industry—An Overview, The. U.S. Bureau of Mines Information Circular 9220, 1989.

Using the Geologic Setting of Talc Deposits as an Indicator of Amphibole Asbestos Content. Environmental Geology, 2004.

TABLE 1  
SALIENT TALC AND PYROPHYLLITE STATISTICS<sup>1</sup>

(Thousand metric tons and thousand dollars)

	2011	2012	2013	2014	2015
United States:					
Mine production, crude:					
Quantity:					
Talc	616	515	542	608 <sup>r</sup>	687
Pyrophyllite	W	W	W	W	W
Value:					
Talc	21,800	17,100	20,800	16,700 <sup>r,e</sup>	19,400 <sup>e</sup>
Pyrophyllite	W	W	W	W	W
Sold by producers, processed:					
Quantity:					
Talc	567	575	560	551 <sup>r</sup>	552
Pyrophyllite	W	W	W	W	W
Value:					
Talc	87,700	87,200	91,300	94,000 <sup>r,e</sup>	93,400 <sup>e</sup>
Pyrophyllite	W	W	W	W	W
Exports, talc: <sup>2</sup>					
Quantity	223	270	196	190 <sup>r</sup>	206
Value	52,700	56,800	56,900	55,500 <sup>r</sup>	59,400
Imports for consumption, talc: <sup>2</sup>					
Quantity	285	350	275	308 <sup>r</sup>	322
Value	77,100	109,000	111,000	102,000	109,000
Apparent consumption <sup>3</sup>	678	595	621	726 <sup>r</sup>	803
World, production	7,780 <sup>r</sup>	7,830 <sup>r</sup>	8,550 <sup>r</sup>	8,370 <sup>r</sup>	8,430 <sup>e</sup>

<sup>e</sup>Estimated. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data.

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Excludes powder—talcum (in packages), face, and compact.

<sup>3</sup>Mine production plus imports minus exports. Company stockpiles were not considered because data were unavailable.

TABLE 2  
END USES FOR TALC PRODUCED IN THE UNITED STATES<sup>1</sup>

(Metric tons)

End use	2014	2015
Ceramics <sup>2</sup>	131,000	124,000
Cosmetics	14,900	13,200
Paint	84,600	82,400
Paper	86,700	85,400
Plastics	59,600	61,700
Roofing	30,400	32,300
Rubber	13,600	18,800
Other <sup>3</sup>	64,200 <sup>r</sup>	62,200
Total	485,000 <sup>r</sup>	480,000

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes automotive catalytic converter bodies, ceramic tile, potteryware, sanitaryware, and technical ceramics.

<sup>3</sup>Includes animal feed, construction caulks, food, insecticides, joint compounds, pharmaceuticals, sculpture, and other uses not specified.

TABLE 3  
U.S. EXPORTS OF TALC<sup>1,2</sup>

Country	2014		2015	
	Quantity (metric tons)	Value <sup>3</sup> (thousands)	Quantity (metric tons)	Value <sup>3</sup> (thousands)
Argentina	2,230	\$1,140	1,550	\$858
Australia	460	345	827	703
Belgium	1,610	697	7,900	2,470
Brazil	7,710 <sup>r</sup>	3,810 <sup>r</sup>	7,280	3,540
Canada <sup>4,5</sup>	75,000 <sup>r</sup>	10,700 <sup>r</sup>	76,700 <sup>e</sup>	10,900 <sup>e</sup>
Chile	5,620	2,670	5,770	2,710
China	6,410 <sup>r</sup>	3,600 <sup>r</sup>	3,890	2,360
Colombia	665	535	937	593
France	1,090	628	882	552
Indonesia	2,140	874	2,330	886
Italy	232	139	1,540	1,070
Japan	3,640	1,640	2,620	1,320
Malaysia	1,040	501	1,010	535
Mexico <sup>5</sup>	60,900 <sup>r</sup>	16,400 <sup>r</sup>	70,000	19,300
Philippines	1,920	769	2,700	819
Singapore	5,190 <sup>r</sup>	2,660	3,900	2,250
Taiwan	2,270	1,210	2,740	1,460
Thailand	2,170	1,200	3,020	1,580
United Kingdom	208	138	1,340	671
Uruguay	1,240	599	1,850	860
Other <sup>6</sup>	8,530 <sup>r</sup>	5,160 <sup>r</sup>	6,850	3,960
Total	190,000 <sup>r</sup>	55,500 <sup>r</sup>	206,000	59,400

<sup>e</sup>Estimated. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Does not include powder—talcum (in packages), face, and compact—or cut and sawed talc.

<sup>3</sup>Free alongside ship.

<sup>4</sup>Thought to include shipments in transit through Canadian ports.

<sup>5</sup>Data taken from the United Nations Comtrade Database because it is more consistent with data reported by the U.S. Census Bureau in prior years.

<sup>6</sup>Includes 37 countries in 2014 and 35 countries in 2015.

Source: U.S. Census Bureau, except where otherwise noted.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF TALC, BY COUNTRY<sup>1</sup>

Country	Not crushed or powdered		Crushed or powdered		Cut and sawed		Total unmanufactured	
	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)
2014:								
Australia	1,150	\$1,150	--	--	1	\$7	1,150 <sup>r</sup>	\$1,160
Austria <sup>3</sup>	--	--	460 <sup>r</sup>	\$468 <sup>r</sup>	177 <sup>r</sup>	274 <sup>r</sup>	637 <sup>r</sup>	741 <sup>r</sup>
Brazil	28	53	--	--	1,920	2,370	1,950	2,420
Canada	54	129	76,200	34,800	9,820	9,060	86,100	44,000
China	32	80	38,100	12,600	1,340 <sup>r</sup>	2,410	39,500	15,000
France <sup>3</sup>	42	11	3,110	940	--	--	3,150	951
Hong Kong <sup>4</sup>	15,300	7,030	1	3	(5)	9	15,300	7,040
India <sup>3</sup>	293	219	92	42	808	1,270	1,190	1,530
Italy <sup>3</sup>	-- <sup>r</sup>	-- <sup>r</sup>	1,490 <sup>r</sup>	1,560 <sup>r</sup>	47	77	1,540 <sup>r</sup>	1,640 <sup>r</sup>
Japan	--	--	31,200	1,620	119	691	31,300	2,320 <sup>r</sup>
Netherlands	--	--	4,870	1,450	(5)	8	4,870	1,460
Pakistan	37,800	7,670	79,800	14,500	8 <sup>r</sup>	18 <sup>r</sup>	118,000	22,200
Other <sup>r,6</sup>	22	9	3,700	594	427	1,070	4,150	1,680
Total	54,700 <sup>r</sup>	16,300 <sup>r</sup>	239,000 <sup>r</sup>	68,600 <sup>r</sup>	14,700	17,300	308,000 <sup>r</sup>	102,000
2015:								
Australia	--	--	21	9	--	--	21	9
Austria <sup>3</sup>	--	--	436	427	87	324	523	751
Brazil	3	7	473	290	1,950	2,650	2,430	2,940
Canada	101	300	80,900	40,300	7,770	7,020	88,700	47,700
China	36,800	15,600	56,200	5,330	3,310	4,630	96,300	25,600
France <sup>3</sup>	2,000	447	1,250	662	--	--	3,240	1,110
India <sup>3</sup>	131	108	871	291	545	913	1,550	1,310
Italy <sup>3</sup>	--	--	1,050	1,240	816	632	1,870	1,870
Japan	--	--	8,320	1,340	174	866	8,500	2,210
Netherlands	--	--	3,770	1,750	--	--	3,770	1,750
Pakistan	10,000	2,050	105,000	19,300	17	20	115,000	21,300
Other <sup>6</sup>	10	66	621	874	256	1,500	887	2,440
Total	49,100	18,600	258,000	71,800	14,900	18,600	322,000	109,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>U.S. customs declared value.

<sup>3</sup>Data taken from the United Nations Comtrade Database because it is more consistent with data reported by the U.S. Census Bureau in prior years.

<sup>4</sup>Thought to be talc from China shipped through Hong Kong.

<sup>5</sup>Less than ½ unit.

<sup>6</sup>Includes 20 countries in 2014 and 16 countries in 2015.

Source: U.S. Census Bureau, except where otherwise noted.

TABLE 5  
TALC AND PYROPHYLLITE: WORLD PRODUCTION, BY COUNTRY AND PRODUCT<sup>1,2</sup>

(Metric tons)

Country <sup>3</sup>	2011	2012	2013	2014	2015 <sup>e</sup>
Argentina, talc and related materials	24,379	23,576	27,124 <sup>r</sup>	25,000 <sup>e</sup>	25,000
Australia, chlorite, pyrophyllite, steatite, talc <sup>e</sup>	120,000	120,000	120,000	120,000	120,000
Austria, talc and leucophyllite (white mica), crude	132,018	135,665	134,814	131,108 <sup>r</sup>	122,326 <sup>4</sup>
Bhutan, talc	8,562	16,063 <sup>r</sup>	9,584	12,601 <sup>r</sup>	13,000
Brazil, talc and pyrophyllite:					
Crude	443,533	459,539	592,844	644,478	645,000
Beneficiated	135,421	133,601	145,106	198,641	200,000
Total	578,954	593,140	737,950	843,119	845,000
Canada, pyrophyllite, soapstone, talc	116,000 <sup>r</sup>	130,000 <sup>r</sup>	175,000	90,000 <sup>r</sup>	164,000 <sup>4</sup>
China, talc and related materials <sup>e</sup>	2,200,000	2,100,000	2,200,000	2,100,000 <sup>r</sup>	2,200,000
Egypt, pyrophyllite, soapstone, talc	12,935	22,000 <sup>r,e</sup>	63,000 <sup>r</sup>	20,000	24,360 <sup>4</sup>
Finland, talc	429,494	396,332	361,840	380,821	332,174 <sup>4</sup>
France, talc, crude <sup>e</sup>	420,000	420,000	450,000	450,000	450,000
Greece, talc	200	--	--	--	--
Guatemala, talc	8,300	2,311	7,084	7,250 <sup>r</sup>	7,500
India:					
Pyrophyllite <sup>5</sup>	251,939	248,022	217,690	207,454 <sup>r</sup>	147,431 <sup>4</sup>
Soapstone and steatite	974,000	954,000	940,000	865,126 <sup>r,5</sup>	774,281 <sup>4,5</sup>
Total	1,225,939	1,202,022	1,157,690	1,072,580 <sup>r</sup>	921,712 <sup>4</sup>
Iran, talc	59,000 <sup>r</sup>	116,000 <sup>r</sup>	93,000 <sup>r</sup>	52,000 <sup>r</sup>	55,000
Italy, steatite and talc <sup>e</sup>	140,000 <sup>r</sup>	140,000 <sup>r</sup>	162,234 <sup>r,4</sup>	165,000 <sup>r</sup>	165,000
Japan: <sup>e</sup>					
Pyrophyllite	350,000	340,000	340,000	340,000	340,000
Talc	24,000	25,000	25,000	25,000	25,000
Total	374,000	365,000	365,000	365,000	365,000
Korea, North, unspecified <sup>e</sup>	50,000	50,000	50,000	50,000	50,000
Korea, Republic of:					
Pyrophyllite	510,708	483,133	524,881	622,865 <sup>r</sup>	600,000
Talc	15,608	21,625 <sup>r</sup>	2,808	5,484 <sup>r</sup>	5,000
Total	526,316	504,758 <sup>r</sup>	527,689	628,349 <sup>r</sup>	605,000
Macedonia, talc	547	286	621 <sup>r</sup>	483 <sup>r</sup>	598 <sup>4</sup>
Mexico, talc	51,221	463,214 <sup>r</sup>	846,813 <sup>r</sup>	752,077 <sup>r</sup>	752,000
Morocco, talc	500	200	--	--	--
Nepal, talc	6,935	5,140	5,703 <sup>r</sup>	3,183 <sup>r</sup>	1,643 <sup>4</sup>
Norway, soapstone, steatite, talc	8,191	7,983	-- <sup>r</sup>	-- <sup>r</sup>	--
Pakistan, soapstone	69,176 <sup>r</sup>	75,891 <sup>r</sup>	88,989 <sup>r</sup>	80,289 <sup>r</sup>	113,509 <sup>4</sup>
Peru:					
Pyrophyllite	30,389	30,399	31,678	17,859	26,209 <sup>4</sup>
Talc	28,296	31,559	32,899	28,847	26,781 <sup>4</sup>
Total	58,685	61,958	64,577	46,706	52,990 <sup>4</sup>
Portugal, talc	15,462	15,131	11,349	14,942 <sup>r</sup>	11,204 <sup>4</sup>
Romania, talc	131 <sup>r</sup>	13 <sup>r</sup>	--	--	--
Russia, talc <sup>e</sup>	160,000	160,000	160,000 <sup>r</sup>	150,000 <sup>r</sup>	150,000
Saudi Arabia, pyrophyllite	25,000	8,000	6,000	7,000	8,000
Slovakia, talc	7,000	2,000	10,000	3,000	3,000
South Africa:					
Pyrophyllite	121,368	18,734	17,336	22,500 <sup>r</sup>	16,801 <sup>4</sup>
Talc	4,453	4,765	4,924	4,827 <sup>r</sup>	4,497 <sup>4</sup>
Total	125,821	23,499	22,260	27,327 <sup>r</sup>	21,298 <sup>4</sup>
Spain, steatite and talc	11,957	8,857	-- <sup>r</sup>	-- <sup>r</sup>	--
Sweden, soapstone and talc	3,000	--	--	--	--
Taiwan, talc	659 <sup>r</sup>	778 <sup>r</sup>	362 <sup>r</sup>	133 <sup>r</sup>	162 <sup>4</sup>
Thailand:					
Pyrophyllite	5,300 <sup>r</sup>	35,000 <sup>r</sup>	35,000 <sup>r,e</sup>	49,100 <sup>r</sup>	45,500
Talc	2,304	5,856	7,880	8,208 <sup>r</sup>	6,768 <sup>4</sup>
Total	7,604 <sup>r</sup>	40,856 <sup>r</sup>	42,880 <sup>r</sup>	57,308 <sup>r</sup>	52,268 <sup>4</sup>

See footnotes at end of table.



TABLE 5—Continued  
TALC AND PYROPHYLLITE: WORLD PRODUCTION, BY COUNTRY AND PRODUCT<sup>1,2</sup>

(Metric tons)

Turkey:					
Pyrophyllite	115,462	85,251	101,872	100,000 <sup>e</sup>	100,000
Talc	9,959	14,537	1,132	5,048	9,681 <sup>4</sup>
Total	125,421	99,788	103,004	105,048	109,681 <sup>4</sup>
United Kingdom, pyrophyllite, soapstone, talc					
	3,708	3,667	2,947	4,907 <sup>r</sup>	5,000
United States:					
Pyrophyllite	W	W	W	W	W
Talc	616,000	515,000	542,000	608,000 <sup>r</sup>	687,000 <sup>4</sup>
Total	616,000	515,000	542,000	608,000 <sup>r</sup>	687,000 <sup>4</sup>
Uruguay, pyrophyllite, soapstone, steatite, talc					
	54,880	370 <sup>r</sup>	708 <sup>r</sup>	360 <sup>r</sup>	400
Grand total	7,780,000 <sup>r</sup>	7,830,000 <sup>r</sup>	8,550,000 <sup>r</sup>	8,370,000 <sup>r</sup>	8,430,000
Of which:					
Pyrophyllite	1,410,000 <sup>r</sup>	1,250,000 <sup>r</sup>	1,270,000 <sup>r</sup>	1,370,000 <sup>r</sup>	1,280,000
Talc	1,870,000 <sup>r</sup>	2,220,000 <sup>r</sup>	2,570,000 <sup>r</sup>	2,510,000 <sup>r</sup>	2,540,000
Unspecified	4,500,000 <sup>r</sup>	4,370,000 <sup>r</sup>	4,700,000 <sup>r</sup>	4,490,000 <sup>r</sup>	4,610,000

<sup>e</sup>Estimated. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; not included in "Grand total." -- Zero.

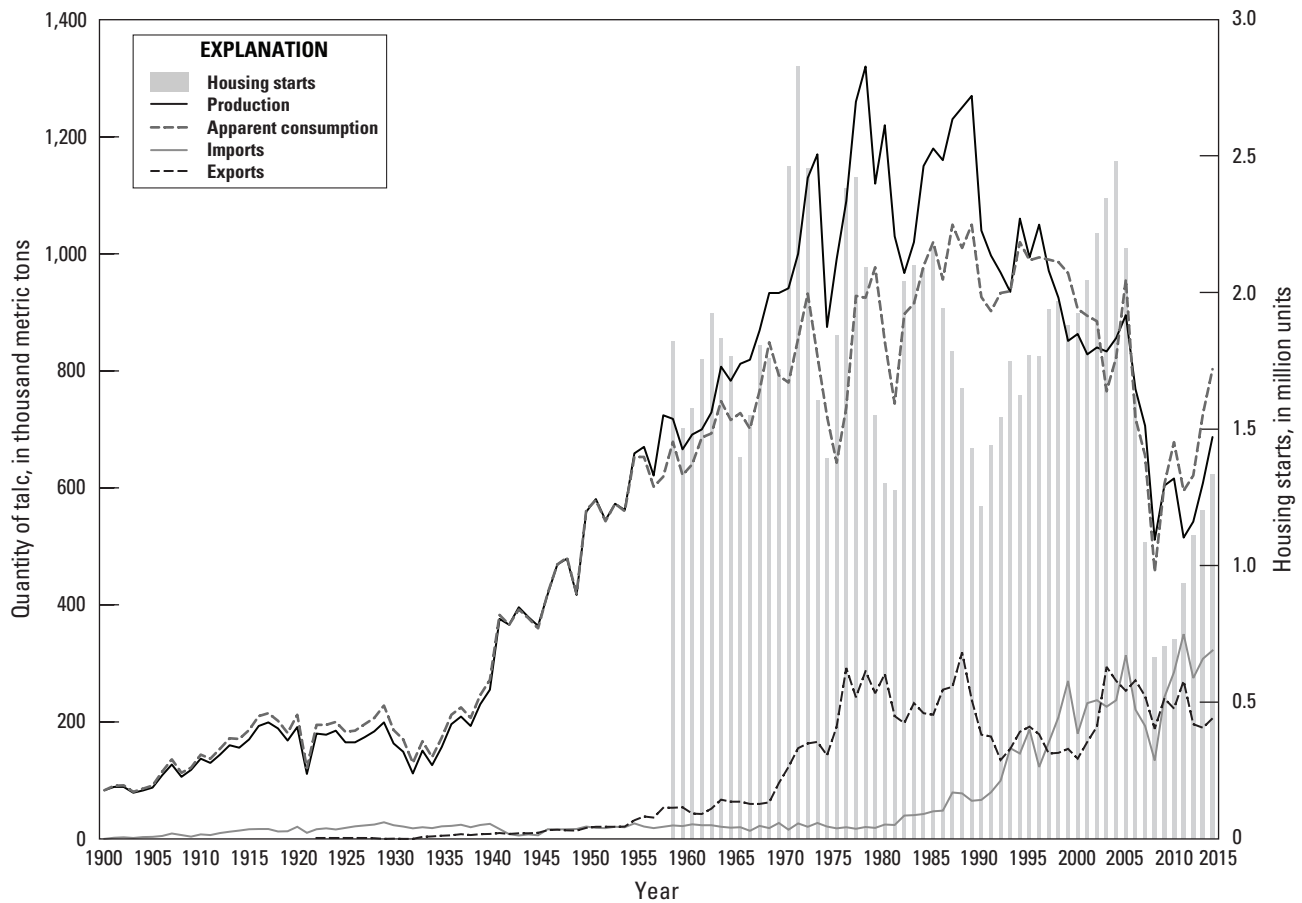
<sup>1</sup>Grand totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes data available through June 23, 2017.

<sup>3</sup>In addition to the countries listed, talc was produced in Afghanistan and may have been produced in Nigeria, and pyrophyllite may have been produced in Morocco and Vietnam, but available information was inadequate to make reliable estimates of output.

<sup>4</sup>Reported figure.

<sup>5</sup>Data based on fiscal year ending March 31 of that stated.



**Figure 1.** Salient U.S. talc statistics from 1900 through 2015 and U.S. housing starts from 1959 through 2015. Pyrophyllite is included with talc production from 1936 through 1990. Production and apparent consumption generally follow the trend in housing starts owing to use of talc in various construction materials, and the numerous short-term declines in production and apparent consumption often reflect periods of economic recession. Sources: U.S. Census Bureau (2016), U.S. Geological Survey.