



2017 Minerals Yearbook

TALC AND PYROPHYLLITE [ADVANCE RELEASE]

TALC AND PYROPHYLLITE

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In 2017, mine production of crude talc in the United States increased by 6% to 610,000 metric tons (t) valued at \$21.9 million compared with the revised 578,000 t valued at \$17.2 million during 2016, but the quantity of talc sold was unchanged from 2016 at 528,000 t valued at \$113 million compared with the revised 528,000 t valued at \$104 million (table 1). Owing primarily to lower imports, U.S. apparent consumption of talc decreased by 4% to 744,000 t from the revised 771,000 t in 2016. Exports of talc in 2017 decreased by 8% to 220,000 t valued at \$123 million from 239,000 t valued at \$82.8 million, and imports decreased by 6% to 354,000 t valued at \$121 million from 378,000 t valued at \$130 million. Domestic production and sales of pyrophyllite were estimated to have increased from those in 2016. World production of talc, pyrophyllite, and related materials totaled 7.27 million metric tons (Mt) during 2017, slightly higher than the revised 7.18 Mt produced during the prior year. Considering production of talc (including soapstone and steatite) only, the United States ranked third globally, following China and India.

Talc is a hydrous magnesium silicate composed of weakly bonded layers that can easily slide past one another, imparting a distinct slippery feel coupled with a low hardness (Mohs scale of 1). 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 primarily been 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 traditionally been mined in North Carolina.

Talc production and sales decreased after 1995 as a result of declining domestic demand; in 2017, U.S. mine output was 58% of that in 1995. Contributing factors included 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). In contrast, sales of U.S. talc for plastics rose by more than 34% from 1995 to 2017, primarily a result of increased use in automobiles. However, a significant share of the consumption was met with imported talc.

Pyrophyllite followed a similar trend with sales decreasing since 1979 as use in the manufacture of refractory products decreased 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 producers 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 2016, operating five mines in three States. All were open pit mining operations. The producers were, in alphabetical order, Barretts Minerals Inc. (a subsidiary of Minerals Technologies Inc.) in Montana, Dal-Tile Corp. in Texas, and Imerys S.A. in Montana and Vermont. On July 20, 2017, Dal-Tile (a subsidiary of Mohawk Industries Inc.) acquired American Talc Co., which operated a talc mine near Van Horne, Hudspeth County, TX. U.S. mine production of crude talc increased by 6% to 610,000 t valued at \$21.9 million from the revised 578,000 t valued at \$17.2 million in 2016 (table 1). Montana led all States in the tonnage of talc produced, followed by Texas and Vermont.

Pyrophyllite.—Domestic production data were obtained through a voluntary survey of U.S. pyrophyllite producers conducted by the USGS. The only producer, The Standard Mineral Division of R.T. Vanderbilt Holding Co., Inc., operated two pyrophyllite mines in North Carolina during 2016. Because of incomplete reporting, 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 8% in 2017.

Consumption

Consumption data were derived by the USGS from voluntary surveys of four talc producers and one pyrophyllite producer. These five companies operated seven talc mills in four States and a pyrophyllite mill in North Carolina. Two companies responded to the talc and pyrophyllite 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.

Talc.—Total sales of talc (domestic and export) by U.S. producers were 528,000 t valued at \$113 million in 2017, unchanged in quantity from the revised 528,000 t valued at

\$104 million during the prior year (table 1). Ceramics (mainly for catalytic converter bodies, ceramic tile, and sanitaryware) were the leading identified end use and accounted for 22% of sales, followed by paint (as a filler and extender) and paper (mainly for pitch control), 21% each; plastics (as a filler and extender), 8%; roofing (as a bitumen filler and surface coating) and rubber (as a filler and dusting agent), 4% each; and cosmetics, 2%. Unclassified end uses and exports accounted for the remaining 18% of U.S. talc sales and included animal feed, construction caulks, food, insecticides, joint compounds, pharmaceuticals, sculpture, and other miscellaneous applications (table 2).

Compared with those in 2016, U.S. talc sales during 2017 decreased by 21% for cosmetics, 15% for rubber, and 3% for plastics. Sales of talc rose by 29% for paper, 19% for roofing, and 10% for paint (table 2). Most of the 354,000 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 was used for manufacturing plastic components.

Pyrophyllite.—Domestic sales of pyrophyllite were estimated to have increased by about 7% from those in 2016. 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 2017, the unit value of mine-run crude talc was estimated to be \$36 per metric ton, about 20% higher than \$30 per ton in 2016, and the estimated unit value of processed talc was \$214 per ton, an 8% increase compared with the revised \$197 per ton in 2016 (table 1). 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 2017 rose by 62% to an estimated \$562 per metric ton from an estimated \$347 per ton in 2016 (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 estimated average unit value of \$555 per ton in 2017, a 57% increase from an estimated \$353 per ton in 2016. The average unit value of exports that were not crushed or powdered (unmilled talc) under HTS code 2526.10.0000 increased by 54% to an estimated \$702 per ton in 2017 from an estimated \$456 per ton in 2016. High unit values for some unmilled talc shipments during recent years indicate that specialty products, such as surface-treated milled talc and (or) consumer talc products, such as talcum powder, may have been classified using the same HTS code.

The average customs unit value for total talc imports was \$342 per metric ton in 2017 compared with \$343 per ton in 2016 (table 4). The average unit value for imports of unmilled (not crushed or powdered) talc decreased by 14% to \$184 per ton from \$212 per ton as a result of reduced deliveries of high-value talc during 2017. As with exports, high unit values of individual shipments indicate that some imports may have been misclassified and consisted of specialty talc products or talc-based consumer goods. Milled (crushed or powdered) talc had an average customs unit value of \$344 per ton in 2017, a 4% increase compared with the revised \$330 per ton in

2016. The average unit value of cut or sawed talc (HTS code 6815.99.2000) was \$1,360 in 2017, an 8% increase compared with \$1,260 per ton during the previous year.

Foreign Trade

The tonnage of United States talc exports fell by 8% to 220,000 t valued at \$123 million in 2017 from 239,000 t valued at \$82.8 million in 2016, primarily owing to decreases of 44% and 36% in shipments to Canada and Mexico, respectively (table 3). Mexico (24% of exports by quantity) and Canada (19%) were the leading destinations for domestic talc, and the remainder was distributed among 56 additional countries. More than 98% of U.S. talc shipments in 2017 consisted of nominally milled material.

U.S. talc imports totaled 354,000 t valued at \$121 million, 6% lower than the 378,000 t valued at \$130 million imported in 2016 (table 4). Decreases of 75% in talc deliveries from China (including material transshipped through Hong Kong) and 10% from Canada accounted for most of the decrease. Pakistan was the leading source for imported talc by tonnage, representing 53% of the total, followed by Canada (26%) and China (9%), with the remainder distributed among 27 other countries. Shipments from Pakistan likely included large quantities of talc mined in Afghanistan. About 74% of talc imports was crushed or powdered, 23% was not crushed or powdered, and 3% was cut or sawed. Pakistan (44%) and China (38%) were the predominant sources of the not crushed or powdered talc imports in 2017. Canada and Pakistan accounted for 47% and 34%, respectively, of crushed or powdered talc imports, and Canada supplied 78% of cut or sawed imports, followed by Brazil (11%) and China (5%).

World Review

World production of talc, pyrophyllite, and related materials was estimated to be 7.27 Mt in 2017, slightly more than the revised 7.18 Mt produced in 2016 (table 5). Brazil, Canada, China, Finland, France, India, Italy, Japan, the Republic of Korea, and the United States collectively accounted for about 87% 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 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. reported a mine production capacity of 400,000 metric tons per year of talc; talc also was mined through artisanal and small- to medium-scale operations (Hughes, 2013; Renaud, 2016).

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, 2018). Trends

and projections of subdued growth in the world economy (International Monetary Fund, 2019) suggest that sales of talc for automotive body and underhood components (plastics), catalytic converter bodies (ceramics), paint, plastics, and rubber products may continue to slowly rise. 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 increased since 2009, implying that sales for construction-related markets may continue to increase as well (U.S. Census Bureau, 2018). Global demand for talc is also expected to rise as increases in plastics and automotive ceramics outpaces sales declines for paper and traditional ceramics (Wilson, 2016). Sales of pyrophyllite may also increase slightly as the economy expands.

References Cited

- 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.
- Federal Reserve Board, 2018, Data download program—Industrial production and capacity utilization: Washington, DC, Federal Reserve Board, December 14. (Accessed October 22, 2018, via <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=G17>.)
- 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, 2019, *World economic outlook*, April 2019—Growth slowdown, precarious recovery: Washington, DC, International Monetary Fund, April. (Accessed April 24, 2019, at <https://www.imf.org/en/Publications/WEO/Issues/2019/03/28/world-economic-outlook-april-2019/>.)
- 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.
- Renaud, K.M., 2016, 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 2016: Mining Engineering*, v. 68, no. 7, July, p. 75–78.
- U.S. Census Bureau, 2018, *New residential construction—Historical data*: Washington, DC, U.S. Census Bureau. (Accessed April 13, 2019, via http://www.census.gov/construction/nrc/historical_data/index.html.)
- Wilson, Ian, 2016, *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 STATISTICS¹

(Thousand metric tons and thousand dollars)

	2013	2014	2015	2016	2017
United States:					
Mine production, crude:					
Quantity:					
Talc	542	608	615	578 ^r	610
Pyrophyllite	W	W	W	W	W
Value:					
Talc	20,800	16,700 ^e	18,100	17,200 ^r	21,900
Pyrophyllite	W	W	W	W	W
Sold by producers, processed:					
Quantity:					
Talc	560	551	535	528 ^r	528
Pyrophyllite	W	W	W	W	W
Value:					
Talc	91,300	94,000 ^e	99,700	104,000 ^r	113,000
Pyrophyllite	W	W	W	W	W
Exports, talc: ²					
Quantity	196	190	206	239	220
Value	56,900	55,500	59,400	82,800	123,000
Imports for consumption, talc: ²					
Quantity	275	308	322	378	354
Value	111,000	102,000	109,000	130,000	121,000
Apparent consumption ³	621	726	731	771 ^r	744
World, production	8,080 ^r	8,220 ^r	7,170 ^r	7,180 ^r	7,270

^eEstimated. ^rRevised. W Withheld to avoid disclosing company proprietary data.

¹Table includes data available through July 11, 2019. Data are rounded to no more than three significant digits.

²Excludes powder—talcum (in packages), face, and compact.

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

TABLE 2
END USES FOR TALC PRODUCED IN THE UNITED STATES¹

(Metric tons)

End use	2016 ^r	2017
Ceramics ²	112,000	114,000
Cosmetics	12,400	9,790
Paint	101,000	111,000
Paper	85,000	110,000
Plastics	45,600	44,200
Roofing	19,100	22,700
Rubber	23,600	20,000
Other ³	130,000	96,600
Total	528,000	528,000

^rRevised.

¹Table includes data available through July 11, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes automotive catalytic converter bodies, ceramic tile, potteryware, sanitaryware, and technical ceramics.

³Includes animal feed, construction caulks, exports, food, insecticides, joint compounds, pharmaceuticals, sculpture, and other uses not specified.

TABLE 3
U.S. EXPORTS OF TALC^{1,2}

Country or locality	2016		2017	
	Quantity (metric tons)	Value ³ (thousands)	Quantity (metric tons)	Value ³ (thousands)
Argentina	1,360	\$737	2,000	\$1,090
Australia	965	345	505	301
Belgium	7,700	3,080	2,740	1,470
Brazil	5,230	2,140	6,560	2,950
Canada ^{4,5}	76,300	11,400	42,500	12,700
Chile	6,880	3,320	5,880	2,640
China	13,500	11,700	34,500	29,600
Colombia	1,970	1,150	1,750	1,110
Costa Rica	1,240	368	1,220	334
France	1,120	587	786	444
Indonesia	9,240	9,270	15,300	17,700
Italy	1,010	802	711	539
Japan	3,970	1,850	4,050	2,020
Korea, Republic of	1,150	511	2,670	947
Malaysia	825	429	843	427
Mexico ⁵	84,200	22,700	53,800	26,700
Philippines	940	449	1,320	607
Poland	5,630	3,500	22,800	11,500
Singapore	2,090	1,000	2,090	1,050
Taiwan	2,300	1,180	2,400	1,310
Thailand	2,180	1,200	3,970	2,480
United Kingdom	1,070	508	825	385
Uruguay	1,770	734	1,800	709
Other ⁶	6,120 ^r	3,850 ^r	8,690	4,370
Total	239,000 ^r	82,800 ^r	220,000	123,000

^rRevised.

¹Table includes data available through July 11, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

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

³Free alongside ship.

⁴Thought to include shipments in transit through Canadian ports.

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

⁶Includes 38 countries and (or) localities in 2016 and 35 countries and (or) localities in 2017.

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

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF TALC, BY COUNTRY OR LOCALITY¹

Country or locality	Not crushed or powdered		Crushed or powdered		Cut and sawed		Total unmanufactured	
	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)
2016:								
Australia	7,560	\$687	--	--	--	--	7,560	\$687
Austria ³	--	--	312	\$351	3	\$11	315	362
Brazil	22	47	715	124	1,490	1,910	2,230	2,090
Canada	101	231	89,200	44,900	11,800	12,700	101,000	57,800
China ³	27,800	8,230	99,900	21,800	773	1,670	128,000	31,700
France	--	--	2,420	2,100	5	9	2,420	2,110
India ³	64	75	1,590	387	227	562	1,880	1,020
Italy ³	--	--	1,050 ^r	1,240 ^r	816 ^r	632 ^r	1,870 ^r	1,870 ^r
Japan	--	--	2,010	2,060	218	1,260	2,220	3,320
Netherlands	18	11	4,940	2,560	--	--	4,960	2,570
Pakistan	43,500	7,480	80,800	17,200	--	--	124,000	24,600
Other ⁴	10	48	729	801	219	808	958	1,660
Total	79,100	16,800	284,000	93,600 ^r	15,500 ^r	19,500 ^r	378,000	130,000
2017:								
Australia	7,350	673	1,310	953	--	--	8,670	1,630
Austria	--	--	337	350	2	10	339	360
Brazil	--	--	345	228	1,310	1,740	1,650	1,970
Canada	135	310	82,000	42,500	9,280	10,700	91,400	53,500
China ³	30,500	6,140	508	503	607	1,280	31,600	7,920
France	6,220	1,000	2,370	2,520	--	--	8,600	3,520
Hong Kong	--	--	10,300	3,450	--	--	10,300	3,450
India	60	56	1,600	522	285	602	1,940	1,180
Italy	18	26	1,820	1,860	110	191	1,950	2,080
Japan	--	--	879	1,190	149	1,010	1,030	2,200
Netherlands	36	22	9,400	5,080	--	--	9,440	5,100
Pakistan	35,400	6,370	151,000	30,700	--	--	187,000	37,000
Other ⁴	43	49	610	610	93	598	746	1,260
Total	79,800	14,600	263,000	90,500	11,800	16,100	354,000	121,000

^rRevised. -- Zero.

¹Table includes data available through July 11, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

²U.S. customs declared value.

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

⁴Includes 17 countries and (or) localities in 2016 and 18 countries and (or) localities in 2017.

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

TABLE 5
TALC AND PYROPHYLLITE: WORLD PRODUCTION BY COUNTRY AND PRODUCT¹

(Metric tons)

Country or locality and form	2013	2014	2015	2016	2017
Argentina	31,905 ^r	47,442 ^r	33,774 ^r	16,266 ^r	20,000 ^e
Australia, chlorite, pyrophyllite, steatite, talc ^e	104,000	115,000	80,000	111,000 ^r	110,000
Austria, talc, including leucophyllite	134,814	131,108	122,326 ^r	123,040 ^r	125,000
Bhutan, talc	9,584	12,601	5,807	2,261 ^r	2,260 ^e
Brazil, talc and pyrophyllite:					
Beneficiated	145,106	198,641	200,000 ^e	200,000 ^e	200,000 ^e
Crude	592,844	644,478	645,000 ^e	645,000 ^e	650,000 ^e
Total	738,000	843,000	845,000 ^e	845,000 ^e	850,000 ^e
Canada, pyrophyllite, soapstone, talc	175,000 ^e	90,000 ^e	175,000	199,000 ^r	200,000 ^e
Chile, pyrophyllite	--	--	--	180,000 ^{r,e}	180,000
China, talc and related materials	1,970,000	1,870,000	1,850,000 ^r	1,800,000 ^e	1,800,000 ^e
Egypt, pyrophyllite, soapstone, talc	10,000 ^r	10,000 ^r	24,360 ^r	14,300 ^r	15,000 ^e
Finland, talc	362,000	380,000	332,000	345,739 ^r	350,000 ^e
France, talc, crude ^e	450,000	450,000	450,000	450,000	450,000
Guatemala, talc	7,084	7,250	3,779	2,733 ^r	2,750 ^e
India:					
Pyrophyllite ²	386,660	401,347	167,000 ^{e,3}	170,000 ^e	170,000 ^e
Soapstone and steatite	821,163 ^r	936,261 ^{r,3}	803,000 ^{e,3}	730,000 ^r	750,000 ^e
Total	1,210,000	1,340,000	970,000 ^{e,3}	900,000 ^r	920,000 ^e
Iran, talc	92,958	52,492	150,965	130,000 ^r	130,000 ^e
Italy, steatite and talc	162,234	165,000 ^e	165,000 ^{e,3}	165,000 ^e	165,000 ^e
Japan:					
Pyrophyllite	340,000 ^r	340,000 ^{r,e}	340,000 ^{r,e}	340,000 ^{r,e}	340,000 ^e
Talc ^e	25,000	25,000	25,000	25,000	25,000
Total	365,000 ^r	365,000 ^{r,e}	365,000 ^{r,e}	365,000 ^{r,e}	365,000 ^e
Korea, Republic of:					
Pyrophyllite	524,881	622,865	596,860	590,000 ^r	600,000 ^e
Talc	2,808	5,484	6,371	2,247 ^r	2,500 ^e
Total	528,000	628,000	603,000	592,000 ^r	603,000 ^e
Macedonia, talc	621	483	598	715	700 ^e
Mexico, talc	846,813	752,077	20,452 ^r	11,392 ^r	12,000 ^e
Nepal, talc ⁴	5,703	5,255 ^r	1,860 ^r	3,003 ^r	4,873
Nigeria, talc	--	--	--	667	650 ^e
Pakistan, soapstone	77,165 ^r	80,289 ^r	113,509	116,678 ^r	115,000 ^e
Peru:					
Pyrophyllite	31,678	17,859	26,209	17,872	22,760
Talc	32,899	28,847	26,758	11,507	19,363
Total	64,600	46,700	53,000	29,400	42,100
Portugal, talc	11,348	14,942	11,204	12,000	12,000 ^e
Saudi Arabia, pyrophyllite	6,000	7,000	40,000 ^r	42,000 ^r	44,000
Slovakia, talc	10,000	3,000	1,000 ^r	700 ^r	800 ^e
South Africa:					
Pyrophyllite	17,336	22,500	16,801	19,114	20,000 ^e
Talc	4,924	4,827	4,497	4,462	4,500 ^e
Total	22,300	27,300	21,300	23,600	24,500 ^e
Sudan, talc	--	--	3,000	4,200	4,000 ^e
Taiwan, talc	362	133	162	250	250 ^e
Thailand:					
Pyrophyllite	26,820 ^e	49,100	45,500	40,000 ^e	40,000 ^e
Talc	7,880	8,208	6,768	7,126 ^r	7,000 ^e
Total	34,700	57,300	52,300	47,100 ^r	47,000 ^e
Turkey:					
Pyrophyllite	101,872	100,000 ^e	50,000 ^e	50,000 ^e	50,000 ^e
Talc	1,132	5,048	9,681	8,559 ^r	8,600 ^e
Total	103,000	105,000	59,700	58,600	58,600 ^e

See footnotes at end of table.

TABLE 5—Continued
TALC AND PYROPHYLLITE: WORLD PRODUCTION BY COUNTRY AND PRODUCT¹

(Metric tons)

Country or locality and form	2013	2014	2015	2016	2017
United Kingdom, pyrophyllite, soapstone, talc	2,947	4,907	5,430 ^r	5,000 ^e	5,000 ^e
United States:					
Pyrophyllite	W	W	W	W	W
Talc	542,000	608,000	615,000	578,000 ^r	610,000
Total	542,000	608,000	615,000	578,000 ^r	610,000
Uruguay, pyrophyllite, soapstone, steatite, talc	708	360	590 ^r	290 ^r	300 ^e
Grand total	8,080,000 ^r	8,220,000 ^r	7,180,000 ^r	7,180,000 ^r	7,270,000
Of which:					
Pyrophyllite	1,440,000 ^r	1,560,000 ^r	1,280,000 ^r	1,450,000 ^r	1,470,000
Talc	2,550,000	2,490,000	1,800,000 ^r	1,720,000 ^r	1,770,000
Other and unspecified	4,090,000	4,160,000	4,100,000	4,000,000	4,030,000

^eEstimated. ^rRevised. W Withheld to avoid disclosing company proprietary data; not included in "Grand total." -- Zero.

¹Table includes data available through August 8, 2018. All data are reported unless otherwise noted. Totals, U.S. data, and estimated data are rounded to three significant digits; may not add to totals shown.

²Production is based on fiscal year, with a starting date of March 31 of the year shown.

³Production is based on fiscal year, with a starting date of April 1 of the year shown.

⁴Production is based on fiscal year, with a starting date of mid-July of the year shown.