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TALC AND PYROPHYLLITE [ADVANCE RELEASE]

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Talc and Pyrophyllite

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In 2018, mine production of crude talc in the United States increased by 6% to 648,000 metric tons (t) valued at $23.8 million compared with 610,000 t valued at $21.9 million in 2017. The quantity of talc sold increased by 4% to 547,000 t valued at $124 million compared with 528,000 t valued at $113 million in 2017 (table 1). Owing primarily to increased exports, U.S. apparent consumption of talc decreased by 9% to 586,000 t from the revised 644,000 t in 2017. Exports of talc in 2018 increased by 24% to 273,000 t valued at $132 million from 220,000 t valued at $123 million, but imports in 2018 decreased by 7% to 313,000 t valued at $122 million from the revised 336,000 t valued at $122 million in 2017. World production of talc, pyrophyllite, and related materials totaled 6.55 million metric tons (Mt) during 2018, slightly lower than the revised 6.63 Mt produced during the prior year (table 5). 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 in the United States remained at approximately 1 million metric tons per year (Mt/yr) from the early 1970s until the late 1990s, peaking in 1979 at more than 1.3 Mt. U.S. apparent consumption of talc was near 1 Mt/yr from the mid-1980s until the end of the 20th century. Decreased demand for talc since 1995 has caused decreased production in the United States, and production has stabilized at an average of approximately 600,000 metric tons per year (t/yr) over the past decade. Factors contributing to this long-term decline in U.S. production included technological developments that reduced the amount of talc incorporated into ceramic tile; portions of the domestic ceramics manufacturing industry moving to countries with lower labor costs; decreased use of oil-based paints, for which talc is ideally suited; decreased paper manufacturing; replacement of some talc by chemical agents 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 talc for plastics rose by more than 90% from 1995 to 2018, primarily a result of increased use in automobiles. A significant share of the consumption, however, was met by imported talc.

Pyrophyllite followed a similar trend as talc with sales decreasing since 1979 as use in refractory products manufacture 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 data 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 from open pit operations in the United States in 2018, operating five mines in three States—Montana, Texas, and Vermont. 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. In early August 2018, workers at the Imerys talc plant at Three Forks, MT, went on strike over employee benefits and work rules; the strike ended at the end of October (Lynes, 2018). U.S. mine production of crude talc in 2018 increased by 6% to 648,000 t valued at $23.8 million from 610,000 t valued at $21.9 million in 2017 (table 1).

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 in 2018. Because of incomplete reporting, pyrophyllite output was estimated from previously reported data and adjusted according to MSHA mine employment hours but was withheld to avoid disclosing company proprietary data; production fell by an estimated 3% in 2018.

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 547,000 t valued at $124 million in 2018, 4% more than the 528,000 t valued at $113 million during the prior year (table 1). Paint (as a filler and extender) was the leading identified end use of talc and accounted for 23% of sales, followed by ceramics (mainly for catalytic converter bodies, ceramic tile, and sanitaryware), 20%; paper (mainly for pitch control), 15%; plastics (as a filler and extender), 12%; roofing (as a bitumen filler and surface coating) and rubber (as a filler and dusting agent), 3% each; and cosmetics, 2%. Unclassified end uses and exports accounted for the remaining 22% 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 2017, U.S. talc sales during 2018 decreased by 28% for roofing, 27% for paper, and 5% each for ceramics and rubber. Sales of talc rose by 42% for plastics, 15% for paint, and 12% for cosmetics (table 2). Most of the 313,000 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 3% from those in 2017. 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 2018, the unit value of mine-run crude talc was estimated to be $37 per metric ton, about 3% higher than $36 per metric ton in 2017, and the estimated unit value of processed talc was $226 per metric ton compared with $214 per metric ton in 2017, a 6% increase (table 1). Sufficient information was not available to estimate the change in value of any type of pyrophyllite.

Trade data were derived from the U.S. Census Bureau . The average free alongside ship unit value of all talc exports during 2018 fell by 14% to an estimated $483 per metric ton from an estimated $562 per metric ton in 2017 (table 3). Crushed or powdered (milled) talc that was exported under Schedule B Harmonized Tariff Schedule of the United States (HTS) code number 2526.20.0000 had an estimated average unit value of $483 per metric ton in 2018, a 13% decrease from an estimated $555 per metric ton in 2017. The average unit value of exports that were not crushed or powdered (unmilled talc) under Schedule B HTS number 2526.10.0000 decreased by 31% to an estimated $483 per metric ton in 2018 from an estimated $702 per metric ton in 2017. 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 $389 per metric ton in 2018, an increase of 7% compared with the revised $363 per metric ton in 2017 (table 4). The average unit value for imports of unmilled (not crushed or powdered) talc in 2018 decreased slightly to $248 per metric ton from the revised $252 per metric ton in 2017. Milled (crushed or powdered) talc had an average customs unit value of $351 per metric ton in 2018, a slight increase compared with $344 per metric ton in 2017. The average unit value of cut or sawed talc HTS code 6815.99.2000 was $1,303 per metric ton in 2018, a 4% decrease compared with $1,360 per metric ton the previous year.

Foreign Trade

The tonnage of United States talc exports rose by 24% to 273,000 t valued at $132 million in 2018 from 220,000 t valued at $123 million in 2017, primarily owing to more than doubled talc shipments to Poland and 12% and 10% increases to Canada and Mexico, respectively, in 2018, compared with those in 2017 (table 3). Four countries each received more than 10% of United States exports: Mexico (22%), Canada and Poland (17% each), and China (14%). The remainder was distributed among 52 other countries and (or) localities.

U.S. talc imports during 2018 totaled 313,000 t valued at $122 million, 7% lower than the revised 336,000 t valued at $122 million imported in 2017 (table 4). A decrease of 30% in talc deliveries from Pakistan was partially offset by more than a doubled imports from China (including material transshipped through Hong Kong). Pakistan was the leading source for imported talc by tonnage, representing 41% of the total, followed by Canada with 29%, China with 11%, and the remainder distributed among 29 other countries and (or) localities. Shipments from Pakistan likely included large quantities of talc mined in Afghanistan. About 84% of talc imports was crushed or powdered, 11% was not crushed or powdered, and 5% was cut or sawed. China (62%) and Australia (21%) were the predominant sources of the not crushed or powdered talc imports in 2018. Pakistan and Canada accounted for 50% and 30%, respectively, of crushed or powdered talc imports, and Canada supplied 74% of cut or sawed imports, followed by China (15%) and Brazil (7%).

World Review

World production of talc, pyrophyllite, and related materials was estimated to be 6.55 Mt in 2018, slightly less than the revised 6.63 Mt produced in 2017 (table 5). Brazil, China, Finland, France, India, the Republic of Korea, and the United States each produced at least 5% of the world total and collectively accounted for about 79% 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, Brazil, and the United States. The Republic of Korea, India, and Japan, in descending order of quantity, were the three leading producers of pyrophyllite. In addition to the countries and (or) localities 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 t/yr of talc; talc also was mined through artisanal and small- to medium-scale operations (Hughes, 2013; Renaud, 2016).

North Korea is also believed to have produced talc, but reliable estimates were not available. In early 2018, the Chinese Government enforced United Nations sanctions against North Korea, resulting in businesses in China which depended

on North Korean talc reportedly being unable to obtain talc (Kim, 2018).

In late June 2018, Elementis Plc, a London based chemicals group, announced that it would buy Dutch company Mondo Minerals from private equity firm Advent International. Mondo owned mines in central Finland which produced talc used in plastics, coatings, food packaging, and ultraviolet protection (Costello, 2018).

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, 2019). Trends and projections of slowing growth in the world economy (International Monetary Fund, 2019) suggest that sales of talc for automotive body and under hood components (plastics), catalytic converter bodies (ceramics), paint, plastics, and rubber products may only marginally 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 to construction-related markets may continue to increase as well (U.S. Census Bureau, 2019). Sales of pyrophyllite may also increase slightly as the economy expands.

References Cited

Costello, Miles, 2018, Elementis makeover with deal for talc miner: The Times [London, United Kingdom], June 30. (Accessed June 30, 2018, at https://www.thetimes.co.uk/article/elementis-makeover-with-deal-for-talc-miner-hfccnml53.)

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, 2019, Data download program—Industrial production and capacity utilization: Washington, DC, Federal Reserve Board, December 13. (Accessed December 13, 2019, 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, October 2019—Global manufacturing downturn, rising trade barriers: Washington, DC, International Monetary Fund, October. (Accessed April 24, 2020, at https://www.imf.org/en/Publications/WEO/Issues/2019/10/21/World-Economic-Outlook-October-2019-Global-Manufacturing-Downturn-Rising-Trade-Barriers-48513.)

Kim, Joonho, 2018, Chinese investors in North Korea suffer heavy losses: Radio Free Asia, January 19. (Accessed May 2, 2018, at https://www.rfa.org/english/news/korea/losses-01192018145643.html.)

Lynes, Abby, 2018, Three Forks talc mill lockout ends: Bozeman [MT] Chronicle, October 31. (Accessed December 5, 2018, at https://www.bozemandailychronicle.com/news/business/three-forks-talc-mill-lockout-ends/article_80d08547-1bed-5036-ab23-b04bb4f82c3d.html.)

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, 2019, New residential construction—Historical data: Washington, DC, U.S. Census Bureau. (Accessed January 20, 2019, via https://www.census.gov/construction/nrc/historical_data/index.html.)

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[1]

(Thousand metric tons and thousand dollars)

	2014	2015	2016	2017	2018
United States:					
Mine production, crude:					
Quantity:					
Talc	608	615	578	610	648
Pyrophyllite	W	W	W	W	W
Value:					
Talc	16,700	18,100	17,200	21,900	23,800
Pyrophyllite	W	W	W	W	W
Sold by producers, processed:					
Quantity:					
Talc	551	535	528	528	547
Pyrophyllite	W	W	W	W	W
Value:					
Talc	94,000	99,700	104,000	113,000	124,000
Pyrophyllite	W	W	W	W	W
Exports, talc:[2]					
Quantity	190	206	239	220	273
Value	55,500	59,400	82,800	123,000	132,000
Imports for consumption, talc:[2]					
Quantity	308	322	378	336 r	313
Value	102,000	109,000	130,000	122,000 r	122,000
Apparent consumption[3]	669 r	651 r	667 r	644 r	586
World, production	7,930 r	6,750 r	6,640 r	6,630 r	6,550

rRevised. W Withheld to avoid disclosing company proprietary data.
[1]Table includes data available through August 17, 2020. Data are rounded to no more than three significant digits.
[2]Does not include powder—talcum (in packages), face, and compact.
[3]Sold by producers plus imports minus exports. Company stockpiles were not considered because data were unavailable.

TABLE 2
END USES FOR TALC PRODUCED IN THE UNITED STATES[1]

(Metric tons)

End use	2017	2018
Ceramics[2]	114,000	109,000
Cosmetics	9,790	10,900
Paint	111,000	128,000
Paper	110,000	80,400
Plastics	44,200	62,900
Roofing	22,700	16,300
Rubber	20,000	19,100
Other[3]	96,600	120,000
Total	528,000	547,000

[1]Table includes data available through August 17, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes automotive catalytic converter bodies, ceramic tile, potteryware, sanitaryware, and technical ceramics.
[3]Includes animal feed, construction caulks, exports, food, insecticides, joint compounds, pharmaceuticals, sculpture, and other uses not specified.

TABLE 3
U.S. EXPORTS OF TALC, BY COUNTRY OR LOCALITY[1, 2]

Country or locality	2017 Quantity (metric tons)	2017 Value[3] (thousands)	2018 Quantity (metric tons)	2018 Value[3] (thousands)
Argentina	2,000	$1,090	1,140	$699
Australia	505	301	105	101
Belgium	2,740	1,470	9,230	4,110
Brazil	6,560	2,950	11,000	4,130
Canada[4]	42,500	12,700	47,800	13,600
Chile	5,880	2,640	4,670	2,260
China	34,500	29,600	36,900	24,600
Colombia	1,750	1,110	2,010	1,340
Costa Rica	1,220	334	1,250	369
France	786	444	1,000	703
Indonesia	15,300	17,700	7,260	5,870
Italy	711	539	759	581
Japan	4,050	2,020	4,690	2,540
Korea, Republic of	2,670	947	2,660	948
Malaysia	843	427	1,240	642
Mexico	53,800	26,700	58,900	28,500
Philippines	1,320	607	1,750	648
Poland[5]	22,800	11,500	47,700	18,600
Singapore	2,090	1,050	1,980	1,020
Taiwan	2,400	1,310	2,130	1,160
Thailand	3,970	2,480	4,270	2,890
United Kingdom	825	385	601	440
Uruguay	1,800	709	1,380	510
Other[6]	8,690	4,370	22,900	15,800
Total	220,000	123,000	273,000	132,000

[1]Table includes data available through August 17, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Does not include powder—talcum (in packages), face, and compact—or cut and sawed talc.
[3]Free alongside ship.
[4]Thought to include shipments in transit through Canadian ports.
[5]Thought to include materials that are only partially composed of talc.
[6]Includes 35 countries and (or) localities in 2017 and 33 countries and (or) localities in 2018.

Source: U.S. Census Bureau.

TABLE 4

U.S. IMPORTS FOR CONSUMPTION OF TALC, BY COUNTRY OR LOCALITY[1]

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)
2017:								
Australia	7,350	$673	1,310	$953	--	--	8,670	$1,630
Austria	--	--	337	350	2	$10	339	360
Brazil	4 r	8 r	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]	11,700 r	6,820 r	508	503	607	1,280	12,800 r	8,610 r
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	27 r	1,820	1,860	110	191	1,950	2,080
Japan	--	--	879	1,190	149	1,010	1,030	2,200
Netherlands	37 r	23 r	9,400	5,080	--	--	9,440	5,100
Pakistan	35,400	6,370	151,000	30,700	--	--	187,000	37,000
Other[4]	39 r	40 r	610	610	93	598	742 r	1,250 r
Total	60,900 r	15,300 r	263,000	90,500	11,800	16,100	336,000 r	122,000 r
2018:								
Australia	7,350	640	14,000	2,460	(5)	4	21,300	3,100
Austria	--	--	296	337	--	--	296	337
Brazil	17	45	146	79	1,210	1,590	1,370	1,710
Canada	186	423	79,200	41,400	12,000	14,100	91,400	55,900
China	21,800	6,420	8,820	2,820	2,420	3,380	33,000	12,600
France	5,410	959	2,320	2,420	(5)	8	7,720	3,390
Hong Kong	1	10	10,300	3,450	3	11	10,300	3,470
India	388	212	1,570	511	382	770	2,340	1,490
Italy	(5)	3	1,960	2,150	31	61	2,000	2,220
Japan	--	--	1,470	1,830	87	603	1,560	2,430
Netherlands	--	--	11,400	6,360	--	--	11,400	6,360
Pakistan	22	14	130,000	27,600	--	--	130,000	27,600
Other[4]	--	--	549	559	171	669	720	1,230
Total	35,100	8,730	262,000	91,900	16,300	21,200	313,000	122,000

rRevised. -- Zero.

[1]Table includes data available through August 17, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.

[2]U.S. customs declared value.

[3]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.

[4]Includes 18 countries and (or) localities in 2017 and 20 countries and (or) localities in 2018.

[5]Less than ½ unit

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

TABLE 5
TALC AND PYROPHYLLITE: WORLD PRODUCTION, BY COUNTRY OR LOCALITY AND PRODUCT[1]

(Metric tons)

Country or locality and product	2014	2015	2016	2017	2018
Argentina	41,260 r	27,386 r	11,262 r	8,335 r	10,000 e
Australia, chlorite, pyrophyllite, steatite, talc[e]	115,000	80,000	111,000	110,000	100,000
Austria, talc, including leucophyllite	131,108	122,326	123,040	123,558 r	125,000 e
Bhutan, talc	12,601	5,807	2,261	2,260 e	3,000 e
Brazil, talc and pyrophyllite:					
Beneficiated	168,372 r	160,863 r	160,000 r, e	160,000 r, e	160,000 e
Crude	535,229 r	483,611 r	480,000 r, e	480,000 r, e	500,000 e
Total	703,601 r	644,474 r	640,000 r, e	640,000 r, e	660,000 e
Canada, pyrophyllite, soapstone, talc	90,000	175,000	199,000	215,000 r	210,000 e
China, talc and related materials	1,870,000	1,846,000 r	1,800,000 e	1,800,000 e	1,800,000 e
Egypt, pyrophyllite, soapstone, talc	10,000	24,360	21,672 r	15,000 e	15,000 e
Finland, talc	380,000	332,000	345,739	354,819 r	374,398
France, talc, crude[e]	450,000	450,000	450,000	450,000	450,000
Guatemala, talc	7,250	3,779	2,733	1,981 r	2,000 e
India:					
Pyrophyllite[2]	401,347	167,000 e	170,000 e	170,000 e	170,000 e
Soapstone and steatite[3]	936,261	803,000 e	730,000	750,000 e	750,000 e
Total	1,337,608 r	970,000 e	900,000	920,000 e	920,000 e
Iran, talc	112,500 r	137,135 r	130,000	130,000 e	130,000 e
Italy, steatite and talc[e]	165,000	165,000	165,000	165,000	165,000
Japan, pyrophyllite[e]	160,000 r	160,000 r	160,000 r	160,000 r	160,000
Korea, Republic of:					
Pyrophyllite	622,865	596,860	590,000	431,458 r	346,761
Talc	5,484	6,371	2,247	2,834 r	1,887
Total	628,349 r	603,231 r	592,247 r	434,292 r	348,648
Macedonia, talc	483	598	715	878 r	900 e
Mexico, talc	752,077	20,452	11,392	12,000 e	12,000 e
Nepal, talc[4]	5,255	1,860	3,003	4,873	4,900 e
Nigeria, talc	NA	NA	667	1,897 r	1,500 e
Pakistan, soapstone	80,289	113,509	116,678	177,345 r	122,938
Peru:					
Pyrophyllite	17,859	26,209	17,872	22,760	26,675
Talc	28,847	26,758	11,507	19,363	20,634
Total	46,706 r	52,967 r	29,379 r	42,123 r	47,309
Portugal, talc	14,942	11,204	11,699 r	13,600 r	10,144
Saudi Arabia, pyrophyllite	7,000	40,000	42,000	44,000	46,000
Slovakia, talc	3,000	1,000	700	13,988 r	14,000 e
South Africa:					
Pyrophyllite	22,500	17,352 r	19,114	55,048 r	50,000 e
Talc	4,827	4,497	4,462 r	3,728 r	4,000 e
Total	27,327 r	21,849 r	23,576 r	58,776 r	54,000 e
Sudan, talc	--	3,000	4,200	NA	NA
Taiwan, talc	133	162	250	-- r	17
Thailand:					
Pyrophyllite	49,100	45,500	96,800 r	54,000 r	50,920
Talc	8,208	6,768	7,126	7,436 r	7,756
Total	57,308 r	52,268 r	103,926 r	61,436 r	58,676
Turkey:					
Pyrophyllite[e]	100,000	50,000	50,000	50,000	50,000
Talc	5,048	9,681	8,559	3,882 r	4,000
Total	105,048 r	59,681 r	58,559 r	53,882 r	54,000
United Kingdom, pyrophyllite, soapstone, talc	4,907	5,430	2,997 r	3,671 r	4,000 e
United States:					
Pyrophyllite	W	W	W	W	W
Talc	608,000	615,000	578,000	610,000	648,000
Total	608,000	615,000	578,000	610,000	648,000
Uruguay, pyrophyllite, soapstone, steatite, talc	360	590	290	100 r	100 e

See footnotes at end of table.

TABLE 5—Continued

TALC AND PYROPHYLLITE: WORLD PRODUCTION, BY COUNTRY OR LOCALITY AND PRODUCT[1]

(Metric tons)

Country or locality and product	2014	2015	2016	2017	2018
Grand total	7,930,000 r	6,750,000 r	6,640,000 r	6,630,000 r	6,550,000
Of which:					
Pyrophyllite	1,380,000 r	1,100,000 r	1,150,000 r	987,000 r	900,000
Talc	2,400,000 r	1,640,000 r	1,580,000 r	1,630,000 r	1,690,000
Other and unspecified	4,150,000 r	4,010,000 r	3,920,000 r	4,010,000 r	3,960,000

eEstimated. rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; not included in totals. -- Zero.

[1]Table includes data available through September 18, 2019. All data are reported unless otherwise noted. Grand totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

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

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

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