



2010 Minerals Yearbook

TALC AND PYROPHYLLITE

TALC AND PYROPHYLLITE

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In 2010, talc production increased to 604,000 metric tons (t) valued at \$19.1 million from 511,000 t valued at \$14.6 million in 2009. Sales of talc increased to 567,000 t valued at \$84.9 million from 512,000 t valued at \$57.2 million in 2009. U.S. apparent consumption of talc increased to 622,000 t in 2010 from 457,000 t in 2009. Exports of talc increased to 224,000 t in 2010 from 188,000 t in 2009, and imports increased to 242,000 t in 2010 from 134,000 t in 2009. U.S. production and sales of pyrophyllite increased in 2010 (data are withheld to avoid disclosing proprietary information). World production of talc and pyrophyllite was unchanged at 7.2 million metric tons (Mt) in 2010 from that of 2009.

Legislation and Government Programs

In 2010, the U.S. Department of Defense authorized the disposal of 865 t of block and lump talc and 621 t of ground talc, the entire uncommitted inventory of the National Defense Stockpile (NDS). There were no sales from the NDS in 2010.

Production

Talc.—Domestic production data were obtained through a voluntary survey of U.S. mining companies conducted by the U.S. Geological Survey (USGS). Survey forms were sent to six companies that mined talc, and responses were received from four companies. Responses accounted for essentially all of the production data presented in table 1. Data for the nonrespondents were estimated from preliminary reported data based on 9 months of production in 2010, reported prior-year data adjusted according to employment and consuming industry trends and Mine Safety and Health Administration employment data.

In 2010, three companies operating six mines in three States mined talc. All were open pit mining operations. The producers were, in decreasing order of production, Luzenac Group (a division of Rio Tinto plc) in Montana and Vermont, Specialty Minerals Inc. (a subsidiary of Minerals Technologies Inc.) in Montana, and American Talc Co. in Texas. Alberene Soapstone Co. in Virginia and CAL-TALC, Inc. in California worked from stockpiles in 2010. The three leading domestic producers collectively accounted for all of the U.S. tonnage mined.

U.S. mine production increased to 604,000 t valued at \$19.1 million compared with 511,000 t valued at \$14.6 million in 2009 (table 1). Production rebounded from that of 2009 because of increased manufacturing activity associated with the economic recovery in the United States and many other countries. Production increased in Montana and Vermont and remained unchanged in Texas. Montana led all States in the tonnage of talc produced, followed by Texas and Vermont.

Pyrophyllite.—Domestic production data of pyrophyllite (a hydrous aluminum silicate with a structure similar to talc) were acquired through a voluntary USGS survey of the two U.S. companies. One company responded to the survey. Data for the nonrespondent were estimated from preliminary reported data based on 9 months of production in 2010, reported prior-year data adjusted according to employment and consuming industry trends, and Mine Safety and Health Administration employment data.

Standard Mineral Co. operated two mines in North Carolina, and Standard Industrial Minerals, Inc. operated one mine in California. U.S. production increased slightly in 2010 in response to increased manufacturing activity in the United States. Domestic data were withheld to avoid revealing company proprietary data.

Consumption

Domestic consumption data for talc and pyrophyllite were developed by the USGS from a voluntary survey of U.S. mills. Survey forms were sent to 7 companies operating 10 mills in 6 States for talc and 2 companies operating 2 mills in 2 States for pyrophyllite. Responses from four companies accounted for more than 99% of the talc data presented in table 2. The remaining data were estimated from preliminary data based on 9 months of production in 2010, reported prior-year data adjusted according to employment and consuming industry trends, and Mine Safety and Health Administration employment data.

Talc.—Sales and use were 567,000 t of talc valued at \$84.9 million in 2010, an increase from 512,000 t valued at \$57.2 million in 2009 (table 1). U.S. producers reported that talc sold domestically and not exported increased to 454,000 t in 2010 from 421,000 t in 2009. Ceramics (mainly ceramic tiles) was the leading market, followed by paper, paint, roofing, plastics, cosmetics, and rubber, in decreasing order of consumption (table 2). Sales to the domestic ceramics, paint, paper, and roofing industries each increased more than 8% in 2010 compared with those of 2009. Domestic sales for cosmetics and plastics applications increased slightly and sales to rubber markets decreased in 2010. The largest increase was, by tonnage, in sales for paper applications.

Specialty Minerals reported that revenue from talc sales increased to \$44 million in 2010 from \$32.3 million in 2009, a result of a 9% increase in tonnage sold and increased prices for talc products. Sales to residential and commercial construction and automotive markets by the company improved in 2010 (Minerals Technologies Inc., 2011a, p. 22).

Sales of talc to manufacturers of ceramics (mainly tile), paint, and roofing were tied to commercial and home construction and renovation. Construction starts for new privately owned housing increased to 588,000 units in 2010 from 554,000 units in 2009,

but the value of all construction (residential and commercial) decreased to \$815 billion in 2010 from \$908 billion in 2009 (U.S. Census Bureau, 2011a, c).

Shipments of architectural paint (a major paint market for talc) increased to 2.49 billion liters (659 million gallons) in 2010 from 2.34 billion liters (617 million gallons) in 2009 (U.S. Census Bureau, 2011d). The U.S. International Trade Commission (undated) reported that imports of ceramic tile under Harmonized Tariff Schedule of the United States (HTS) codes 6907.10.00, 6908.10.10, 6908.10.20, and 6908.10.50 increased in quantity to 7.10 million square meters valued at \$68.4 million in 2010 from 6.95 million square meters valued at \$68.6 million in 2009. Ceramic tile is a major market for talc, and U.S. producers sell their talc to domestic tile manufacturers, whose tile competes with imported ceramic tile.

Most of the 242,000 t of imported talc listed in table 4 was not included in the domestic end-use data in table 2. An estimated end-use breakdown of sales of imports in 2010 is plastics, 140,000 t; cosmetics, 30,000 t; paint, 25,000 t; ceramics and refractory products, 12,000 t; paper, 10,000 t; rubber, 8,000 t; and other (unspecified), 17,000 t. Combining domestic sales by U.S. producers (table 2) with sales of imported talc, markets in the United States were, in decreasing order of consumption, plastics, ceramics, paint, paper, cosmetics, roofing, and rubber.

Pyrophyllite.—In 2010, domestic consumption of pyrophyllite increased from that of 2009; data are withheld to avoid disclosing company proprietary data. Pyrophyllite was used in refractory products, paint, ceramics, and unspecified applications, in decreasing order of consumption. Refractory uses accounted for more than 50% of domestic pyrophyllite sales.

Prices

In 2010, the unit value of crude talc was estimated to be \$32 per metric ton compared with \$29 per ton in 2009. Nearly all talc sold in the United States was sold only after crushing and grinding. Following sorting to remove waste, primary crushing, and screening, the unit value of the unmilled talc would likely range from \$50 to \$60 per ton. The average reported unit value of processed talc was \$150 per ton in 2010, a large increase from the unit value of \$112 per ton in 2009. The higher unit value in 2010 resulted largely from increased sales to higher value talc markets, such as paint and paper, as well as price increases that reflected increased operating costs. The unit values of crude and processed pyrophyllite were essentially unchanged in 2010.

The average free alongside ship unit value of all exports increased to \$211 per ton in 2010 from \$200 per ton in 2009 (table 3). The unit value for milled talc (HTS code 2526.20.00.00) exports increased to \$210 per ton in 2010 from \$199 per ton in 2009. The average free alongside ship unit value for exports of unmilled talc (HTS code 2526.10.00.00) increased slightly to \$465 per ton in 2010 from \$460 per ton in 2009. The unit value of unmilled talc was greater than milled talc because there were large numbers of high-value, low-tonnage exports of unmilled talc; milled talc had more large-tonnage, low-value exports.

The average Customs unit value for all talc imports was \$278 per ton in 2010 compared with \$357 per ton in 2009. The average unit value for imports of unground talc (HTS code 2526.10.00.00) was \$206 per ton in 2010, a decrease from \$287 per ton in 2009. Lower prices for unground talc from China were largely responsible for the decline in unit value. The average customs value for ground talc (HTS code 2526.20.00.00) was \$235 per ton in 2010, a decrease from \$252 per ton in 2009. Lower prices for ground talc from Canada and China were largely responsible for the decline in unit value. The average customs value for cut or sawed talc (HTS code 6815.99.20.00) was \$975 per ton, a decrease from \$1,080 per ton in 2009 (table 4).

Foreign Trade

This section summarizes significant trade statistics on talc. Detailed statistics, by country and U.S. port districts, are available from the U.S. International Trade Commission on its Interactive Tariff and Trade Dataweb Website (U.S. International Trade Commission, undated). Trade in talc increased in 2010 compared with that in 2009 as the economies of many nations began to recover from the 2008–09 economic recession. U.S. talc exports increased in tonnage to 224,000 t valued at \$47.2 million in 2010 from 188,000 t valued at \$37.6 million in 2009. By tonnage, Mexico was the leading destination for talc from the United States with 78,000 t, followed by Canada with 54,000 t (table 3). These two countries accounted for 59% of U.S. exports. The remainder was exported to 60 other countries. About 94% of talc exports were milled.

U.S. talc imports increased to 242,000 t valued at \$67.1 million in 2010 from 134,000 t valued at \$47.9 million in 2009. Canada and China accounted for most of the increase in imports. By tonnage, China was the leading source for imported talc, with 44% of the tonnage, followed by Canada with 38% of the tonnage (table 4). The remainder was imported from 32 other countries. Imports from Japan were likely pyrophyllite rather than talc.

World Review

World production of talc and pyrophyllite was estimated to be 7.2 Mt in 2010, unchanged from that of 2009. China was the world's leading producer of talc, followed by, in decreasing order by quantity, the United States, India, Finland, and France (crude). The Republic of Korea was the leading producer of pyrophyllite, followed by Japan and Brazil. Brazil, China, Finland, France, India, Japan, the Republic of Korea, and the United States together produced 78% of the world's talc and pyrophyllite (table 5).

Rio Tinto plc, the parent company for Rio Tinto Minerals, began accepting bids for its talc division in 2010 and by early 2011, Imerys, a French investment company made a binding offer of \$340 million for the talc division. Rio Tinto reported that talc production in 2010 increased to 1 Mt in its global operations compared with 888,000 t in 2009 as sales increased in paper, paint, and polymer markets (Rio Tinto plc, 2011b, p. 50, 53, and 82).

Australia.—Rio Tinto Minerals, a division of Rio Tinto plc, began operating a new \$11 million talc beneficiation plant at its Three Spring mine. The new plant can crush, screen, and wash up to 200 metric tons per hour of primary ore. Overall capacity was 150,000 tons per year of high grade ore. The plant was 30% more energy efficient than the old plant (Rio Tinto Minerals, 2010).

Canada.—Sherritt International Corp., announced that it would close its Canada Talc mine and plant in Madoc and Marmora, Ontario. The company indicated that the cost of mining talc underground was no longer economically viable at those operations. Its mine had been in operation for about 130 years (Sherman, 2010; Sherritt International Corp., 2011, p. 48).

Spain.—Rio Tinto Minerals announced plans to close its Respina talc mine in Leon in 2011. The mine, which operated for 35 years, had exhausted its talc reserves. Rio Tinto also operated a talc mine near Malaga (Watts, 2010).

Outlook

In 2010, the global talc industry showed signs of recovery from the 2008–09 worldwide economic recession. U.S. industrial production increased 5% through April 2011 compared with the same time period in 2010 (Federal Reserve Board, The, 2011). The value of manufacturers' shipments increased 4.8% for automobiles, 23.9% for light trucks and utility vehicles, 3.8% for paper products, and 4.9% for plastics and rubber products (U.S. Census Bureau, 2011b). This suggests that talc used in catalytic converter bodies (ceramics), automotive and truck body and underhood components (plastics), printing papers (pitch control), and rubber (fillers and extenders in tires and other rubber components) may increase for the next 1 to 2 years. Paint shipments increased in 2010 but slowed in early 2011 (U.S. Census Bureau, 2011b, d). The slow commercial and residential construction markets in the United States are likely to affect sales of talc into such markets as adhesives, caulks, ceramics (particularly ceramic tile), joint compounds, architectural paint, and roofing for the next 1 to 2 years.

Rio Tinto and Minerals Technologies reported increased production of talc (5% and 12%, respectively) in the first quarter of 2011, compared with that of the first quarter of 2010 (Minerals Technologies Inc., 2011b; Rio Tinto plc, 2011a). These increases, by the two leading U.S. producers of talc, suggested that U.S. talc production and sales may rebound 8% to 12% overall in 2011. The growth in world talc production is likely to be similar to that of the United States. U.S. pyrophyllite production and sales increased slightly in 2010 as the U.S. economy began to recovery from the 2008–09 recession. Sales to major industries that use pyrophyllite to produce ceramic, paint, and refractory products are likely to increase 3% or 4% per year in the next few years.

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TABLE 1
SALIENT TALC AND PYROPHYLLITE STATISTICS¹

(Thousand metric tons and thousand dollars)

	2006	2007	2008	2009	2010
United States:					
Mine production, crude:					
Quantity:					
Talc	895	769	706	511	604
Pyrophyllite	W	W	W	W	W
Value:					
Talc	27,400	24,400	21,800	14,600	19,100
Pyrophyllite	W	W	W	W	W
Sold by producers, crude and processed:					
Quantity:					
Talc	900	720	667	512	567
Pyrophyllite	W	W	W	W	W
Value:					
Talc	81,300	82,000	83,300	57,200	84,900
Pyrophyllite	W	W	W	W	W
Exports, talc: ²					
Quantity	253	271	244	188	224
Value	46,800	50,600	46,000	37,600	47,200
Imports for consumption, talc:					
Quantity	314	221	193	134 ^r	242
Value	66,700	64,100	56,400	47,900	67,100
Apparent consumption ³	956	719	655	457 [*]	622 [*]
World, production	7,770	7,730 ^r	7,590 ^r	7,230 ^r	7,210 ^c

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

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

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

³Production plus imports minus exports plus adjustments in Government and industry stocks. Does not include pyrophyllite.

^{*}Correction posted on November 1, 2011.

TABLE 2
END USES FOR TALC
PRODUCED IN THE UNITED STATES

(Thousand metric tons)

	2009	2010
Ceramics ¹	95	111
Cosmetics	16	16
Paint	81	88
Paper	81	101
Plastics	39	40
Roofing	31	41
Rubber	14	11
Other ²	65	47
Total	421	454

¹Includes tile.

²Includes art sculpture, construction caulks, insecticides, joint compound, and other uses not specified.

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

(Thousand metric tons and thousand dollars)

Country	2009		2010	
	Quantity	Value ³	Quantity	Value ³
Belgium	--	--	3	504
Canada ⁴	54	10,400	54	10,700
Germany	--	--	(5)	72
Japan	5	743	5	1,040
Mexico	67	6,850	78	7,870
Singapore	3	1,170	11	3,810
Other ⁶	59	18,400	73	23,200
Total	188	37,600	224	47,200

-- Zero.

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

²Excludes powders—talcum (in package), face, and compact.

³Free alongside ship.

⁴Probably includes shipments in transit through Canadian ports.

⁵Less than ½ unit.

⁶Includes 53 countries in 2009 and 56 countries in 2010.

Source: U.S. Census Bureau, data adjusted by the U.S. Geological Survey.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF TALC, BY COUNTRY¹

Country	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)
2009:								
Brazil	3	\$5	172	\$34	1,160	\$936	1,340	\$975
Canada	13	24	35,800	13,600	12,800	14,700	48,600	28,400
China	45,600	12,800	5,400	826	331	194	51,300	13,900 ^r
France	--	--	568	159	--	--	568	159
Japan	--	--	5,700	1,350	48	25	5,750	1,380
Other ³	10	221	26,000 ^r	2,600	739	376	26,700 ^r	3,200
Total	45,600	13,100	73,600 ^r	18,600	15,100	16,300	134,000 ^r	47,900
2010:								
Brazil	31	41	147	35	973	1,210	1,150	1,280
Canada	14	19	76,600	19,300	15,100	13,400	91,700	32,700
China	77,900	15,500	26,400	3,630	833	935	105,000	20,100
France	--	--	1,910	726	--	--	1,910	726
Japan	--	--	3,000	1,460	40	106	3,040	1,570
Other ³	6,010	1,670	32,200	7,780	425	1,290	38,600	10,700
Total	84,000	17,300	140,000	32,900	17,400	16,900	242,000	67,100

^rRevised. -- Zero.

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

²U.S. Customs declared value.

³Includes 23 countries in 2009 and 29 countries in 2010.

Source: U.S. Census Bureau.

TABLE 5
TALC AND PYROPHYLLITE: WORLD PRODUCTION, BY COUNTRY AND PRODUCT^{1,2}

(Metric tons)

Country ³	2006	2007	2008	2009	2010 ^e
Argentina, talc and related materials	23,113 ^r	24,836 ^r	22,218 ^r	22,894 ^r	23,000
Australia: ^{e,4}					
Pyrophyllite	1,200	1,200	1,200	1,200	1,200
Talc	130,000	120,000	120,000	120,000	120,000
Austria, soapstone and talc, crude	159,447	153,409	154,577	111,388 ^r	150,000
Bhutan, talc	45,000 ^e	62,015	56,077	56,000 ^r	60,000
Brazil, talc and pyrophyllite	389,471	401,204	401,210	401,300	410,000
Canada, pyrophyllite, soapstone, talc	72,000	79,000	70,000 ^e	44,000	96,000
Chile, talc	1,961	2,104	2,108	1,202 ^r	1,500
China, unspecified ^e	2,400,000	2,000,000	2,200,000	2,300,000	2,000,000
Egypt, pyrophyllite, soapstone, steatite, talc	40,000 ^e	67,000 ^r	69,000 ^r	72,000 ^r	75,000
Finland, talc ^e	550,000	550,000	550,000	500,000	500,000
France, talc, crude ^e	420,000	420,000	420,000	420,000	420,000
Guatemala, talc	526	1,291	1,030	6,355	5,000
Hungary, talc ^e	500	500	500	500	500
India: ^e					
Pyrophyllite	86,000	87,000	87,000	88,000	87,000
Steatite	560,000	555,000	560,000	550,000	550,000
Iran, talc ^{e,5}	70,000	90,889 ⁶	90,000	90,000	90,000
Italy, steatite and talc ^e	146,942 ⁶	140,000	140,000	140,000	140,000
Japan: ^e					
Pyrophyllite	350,000	345,000	350,000	340,000	340,000
Talc	25,500	26,000	26,000	25,000	24,000
Korea, North, unspecified ^e	50,000	50,000	50,000	50,000	50,000
Korea, Republic of:					
Pyrophyllite	677,465	798,054	892,625	617,411 ^r	700,000
Talc	64,118	9,557	6,438	5,996 ^r	6,000
Macedonia, talc	1,025	1,775	977	-- ^r	--
Mexico, talc	9,834	9,800 ^e	17,577 ^r	33,421 ^r	33,000
Morocco ^e	2,000	2,000	2,000	2,000	2,000
Nepal, talc ⁷	6,648	9,043	9,040 ^e	9,000	9,000
Norway, soapstone, steatite, talc ^e	28,000	28,000	28,000	28,000	26,000
Pakistan, pyrophyllite	24,529	32,675 ^r	33,000 ^r	35,000 ^r	34,000
Paraguay, pyrophyllite, soapstone, talc ^e	200	200	200	200	200
Peru:					
Pyrophyllite	14,500	13,925	14,733	14,750 ⁴	14,800
Talc	9,550	9,171	17,984	13,296 ⁴	13,300 ^p
Portugal, talc	5,517	12,367	8,447	8,500	8,500
Romania, talc ^e	2,967 ⁶	1,513 ⁶	1,700 ^r	500 ^r	1,000
Russia, talc ^e	160,000	170,000	160,000	160,000	160,000
South Africa:					
Pyrophyllite	74,886	123,573	80,704	114,889 ^r	122,511 ⁶
Talc	10,966	14,281	5,145	4,718 ^r	3,150 ⁶
Spain, steatite and talc ^e	100,000	100,000	100,000	100,000	100,000
Sweden, soapstone and talc ^e	14,000 ⁶	14,000	14,000	14,000	14,000
Thailand:					
Pyrophyllite	131,843	415,420	106,600	200,000 ^r	200,000
Talc	4,374	3,508	3,264	3,000 ^e	3,000
Turkey, talc and pyrophyllite	4,969	12,722	3,364 ^r	6,887 ^r	8,000

See footnotes at end of table.

TABLE 5—Continued
TALC AND PYROPHYLLITE: WORLD PRODUCTION, BY COUNTRY AND PRODUCT^{1,2}

(Metric tons)

Country ³	2006	2007	2008	2009	2010 ^e
United Kingdom, pyrophyllite, soapstone, talc ^e	6,000 ⁴	6,000	6,000	6,000	6,000
United States:					
Pyrophyllite	W	W	W	W	W
Talc	895,000	769,000	706,000	511,000	604,000 ⁶
Uruguay, pyrophyllite, soapstone, talc ^e	1,150	1,150	1,150	1,150	1,150
Zimbabwe, talc ^e	140	200	200	200	200
Grand total	7,770,000	7,730,000 ^r	7,590,000 ^r	7,230,000 ^r	7,210,000
Of which:					
Pyrophyllite	1,360,000 ^r	1,820,000	1,570,000	1,410,000 ^r	1,500,000
Steatite	560,000	555,000	560,000	550,000	550,000
Talc	2,410,000 ^r	2,280,000 ^r	2,200,000 ^r	1,970,000 ^r	2,060,000
Unspecified	3,440,000 ^r	3,080,000 ^r	3,260,000 ^r	3,300,000 ^r	3,100,000

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

¹World totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

²Table includes data available through April 29, 2011.

³In addition to the countries listed, Nigeria may produce talc, but information is inadequate to estimate output.

⁴Data based on fiscal year ending June 30 of year stated.

⁵Data based on fiscal year beginning March 21 of year stated.

⁶Reported figure.

⁷Data based on fiscal year beginning mid-July of year stated.