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2013 Minerals Yearbook

ASBESTOS [ADVANCE RELEASE]

U.S. Department of the Interior
U.S. Geological Survey

October 2014

Published by AsbestosClaims.Law
asbestosclaims.law/library/11048/1

Asbestos

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Domestic survey tables were prepared by Richard H. Kraft, statistical assistant, and the world production table was prepared by Glenn J. Wallace, international data coordinator.

Asbestos has not been mined in the United States since 2002 with imports meeting the needs of the domestic marketplace. Domestic mining ended owing to the decline of U.S. and overseas markets caused by health and liability issues associated with asbestos. Estimated U.S. apparent consumption was 772 metric tons (t) in 2013, a 24% decrease from 1,020 t in 2012. World production has remained relatively steady since 2010, with only a slight increase to 2.02 million metric tons (Mt) in 2013 from 2.01 Mt in 2012 (table 1).

Consumption

In 2013, estimated U.S. apparent consumption of asbestos decreased by 24% to 772 t (table 1). Apparent consumption may have been slightly greater if companies used asbestos from stocks, which were thought to be sizable in 2012. The chloralkali industry was the leading consumer of asbestos, accounting for 88% of the asbestos market (table 2). The chloralkali industry used asbestos to manufacture semipermeable diaphragms that separate chlorine generated at the cell anode from the starting brine in the electrolytic cell. Uses, other than for chloralkali manufacture, were thought to have declined sharply since 2011, based on import statistics and manufacturing trends. Other markets for asbestos were coatings and compounds, plastics, roofing products, and unknown uses Chrysotile was the only type of asbestos used in the United States in 2013, with 39% of consumption being grade 3 fiber, 32% was grade 4 fiber, 17% was grade 5 fiber, and 12% was unspecified fiber grades (table 2).

Prices

The average free alongside ship (f.a.s.) unit value of unmanufactured asbestos fiber exports was $1,778 per metric ton in 2013, a 21% increase from $1,468 per ton in 2012. The average U.S. customs unit value for all grades of imported asbestos decreased by 4% to $1,508 per ton in 2013 from $1,566 per ton in 2012.

Foreign Trade

In 2013, U.S. exports of asbestos fiber were 27 t with an f.a.s. value of $48,000, a decrease from 47 t valued at $69,000 in 2012 (tables 1, 4). Asbestos was exported only to India and Italy (table 3). Because no asbestos was produced, reported U.S. exports were reexports of imported fiber or improperly classified products. The United States exported and reexported $33.4 million of asbestos products in 2013, a 27% increase from $26.4 million in 2012. Mexico was the leading destination for asbestos products, accounting for 39% of export shipments, followed by the Republic of Korea with 11% (table 3). Many countries listed as export destinations in table 3 banned the use of asbestos and asbestos products, so imports from the United States under those Harmonized Tariff Schedule (HTS) codes likely were reexported or the U.S. exports were misclassified (U.S. International Trade Commission, undated).

Gaskets, packing, and seals accounted for 39% of the value of manufactured products exported in 2013 according to the U.S. Census Bureau; followed by friction products, including brake linings, clutch linings, and disk pads, with 23% (table 4). Little or no asbestos board, asbestos friction components (brakes and clutches), asbestos gaskets and packings, asbestos insulating paper, or asbestos-cement products have been produced in the United States for many years, so shipments under these product categories may have been exports of asbestos products from inventory, reexports of asbestos products, and (or) exports of products incorrectly classified under these HTS codes.

In 2013, the United States imported 772 t of chrysotile valued at $1.16 million, a 52% decline from 1,610 t valued at $2.52 million in 2012 (table 5). The large decline in imports in 2013 resulted from increased imports and a buildup of inventories in 2012. All fiber imports were from Brazil (table 5). The United States also imported $4.94 million of products with a basis of asbestos and products with a basis of asbestos and magnesium carbonate (table 6). That was a 43% decrease from $8.61 million of product imports in 2012. Products imported under the HTS code for articles of asbestos-cement probably were manufactured using cellulose or other asbestos substitutes. Some nonasbestos products likely were included under other asbestos HTS codes as well based on reported asbestos product imports from countries that have banned asbestos use.

World Review

World production of asbestos increased slightly to 2.02 Mt in 2013 from 2.01 Mt in 2012. Russia was the leading producer of asbestos, followed by China, Brazil, and Kazakhstan. These four countries accounted for 99% of world asbestos production (table 8).

Estimates of world consumption, by country, are presented in table 7. Consumption was calculated as production plus imports minus exports. Changes in stocks, which are not available, were not factored into the calculation. World consumption decreased 5% in 2012 to 1.98 Mt from 2.08 Mt in 2011. Significant increases in consumption occurred in India, Indonesia, and Uzbekistan and significant decreases occurred in Brazil, China, Kazakhstan, Russia, and Thailand. In 2012, China was the leading consumer of asbestos, followed by India, Russia, Brazil, Indonesia, Uzbekistan, Vietnam, Thailand, Sri Lanka, and Ukraine. These 10 countries accounted for 94% of global asbestos consumption. Southeast Asian countries continued to lead in the manufacture of asbestos products and accounted for

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about 69% of global asbestos use in 2012 (table 7). Data for 2013 were not available at the time of publication.

Outlook

U.S. consumption continues to decline as substitutes, alternative materials, and new technology displace asbestos from the few remaining domestic asbestos markets. The chloralkali industry is likely to gain a greater share of the U.S. asbestos market as other uses decline. Use of asbestos by the chloralkali industry, however, may decline in the future as producers of chloralkali move toward a greater use of membrane technology, which does not use asbestos. Globally, asbestos-cement products will continue to be the leading asbestos-based market. World production is likely to remain at approximately 2.0 Mt for the near future because of continued demand for asbestos products in many regions of the world.

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TABLE 1
SALIENT ASBESTOS STATISTICS[1]

		2009	2010	2011	2012	2013
United States:						
Exports and reexports:						
Unmanufactured:						
Quantity[2]	metric tons	59	171	169	47	27
Value[3]	thousands	$69	$121	$207	$69	$48
Asbestos products, value[3]	do.	$24,500	$27,000	$27,000	$26,400	$33,400
Imports for consumption, unmanufactured:						
Quantity	metric tons	869	1,040	1,180	1,610	772
Value[4]	thousands	$684	$821	$1,100	$2,520	$1,160
Consumption, apparent[e]	metric tons	869	1,040	1,180	1,020	772
World, production	do.	2,110,000	2,010,000 [r]	2,050,000 [r]	2,010,000 [r]	2,020,000

[e]Estimated. [r]Revised. do. Ditto.
[1]Data are rounded to no more than three significant digits.
[2]May include reexports and nonasbestos material.
[3]Free alongside ship value; includes exports of crudes, fibers, stucco, sand, and refuse. May also include reexports and nonasbestos material.
[4]U.S. customs declared value.

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TABLE 2
U.S. ASBESTOS CONSUMPTION BY END USE, GRADE, AND TYPE[1, 2]

(Metric tons)

End use	Chrysotile					
	Grade 3	Grade 4	Grade 5	Grade 7	Unspecified grade	Total
2012:						
Coatings and compounds	--	--	--	10	--	10
Chloralkali industry	--	194	486	--	--	680
Plastics	--	--	--	5	--	5
Roofing products	--	--	--	300	--	300
Other	--	--	--	--	20	20
Total	--	194	486	315	20	1,020 [3]
2013:						
Chloralkali industry	300	250	130	--	--	680
Other	--	--	--	--	92	92
Total	300	250	130	--	92	772

-- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Estimated end-use distribution based on prior year end use data, import data, and industry trends.
[3]Excludes 592 metric tons of imported chrysotile that went into company stocks, likely by the chloralkali producers, for future use.

TABLE 3
VALUE OF U.S. EXPORTS AND REEXPORTS OF ASBESTOS FIBERS AND ASBESTOS-BASED PRODUCTS[1, 2, 3]

(Thousand dollars)

Country	2012			2013		
	Unmanufactured fiber[4]	Manufactured products	Total	Unmanufactured fiber[4]	Manufactured products	Total
Australia	--	91	91	--	15	15
Brazil	--	35	35	--	388	388
Canada	--	2,120	2,120	--	1,180	1,180
China	--	295	295	--	533	533
France	--	88	88	--	9	9
Germany	--	203	203	--	2,230	2,230
Italy	--	25	25	16	70	86
Japan	--	510	510	--	476	476
Korea, Republic of	30	2,260	2,290	--	3,700	3,700
Mexico	31	4,350	4,390	--	13,100	13,100
Netherlands	--	35	35	--	45	45
United Kingdom	--	2,000	2,000	--	245	245
Venezuela	--	1,300	1,300	--	1,130	1,130
Other	8	13,100	13,100	32	10,300	10,300
Total	69	26,400	26,500	48	33,400	33,400

-- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Free alongside ship value.
[3]Data may include some nonasbestos products based on destination countries that have banned the use of asbestos.
[4]Includes exports of crudes, fibers, stucco, sand, and refuse. May also include nonasbestos materials.

Source: U.S. Census Bureau.

TABLE 4
U.S. EXPORTS AND REEXPORTS OF ASBESTOS AND ASBESTOS-BASED PRODUCTS[1]

	2012		2013	
	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)
Unmanufactured, asbestos[3]	47	$69	27	$48
Manufactured:				
Cement products[4]	NA	133	NA	540
Friction products[5]	NA	7,810	NA	7,560
Gaskets, packing, and seals	NA	3,400	NA	13,000
Paper and millboard	NA	253	NA	332
Other articles[6]	NA	14,800	NA	11,900
Total	NA	26,400	NA	33,400

NA Not available.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Free alongside ship value.
[3]Includes crudes, fibers, stucco, sand, and refuse. May also include nonasbestos materials.
[4]May include reexports and also cellulose fiber panel, sheet, tile, and tube cement products because asbestos-cement products are not manufactured in the United States.
[5]May include some nonasbestos brake and clutch shipments.
[6]May include some nonasbestos materials.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF ASBESTOS FIBERS, BY TYPE AND ORIGIN[1]

	Brazil	
Type	Quantity (metric tons)	Value[2] (thousands)
2012:		
Chrysotile:		
Milled, grade 4	384	$670
All other	1,220	1,850
Total	1,610	2,520
2013:		
Chrysotile:		
Spinning fibers, grade 3	356	402
Milled, grade 4	276	551
All other	140	211
Total	772	1,160

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]U.S. customs declared value.

Source: U.S. Census Bureau.

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TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF PRODUCTS WITH BASIS OF ASBESTOS IN 2013

HTS[1] code	Category	Quantity (metric tons)	Value[2]	Major sources[3]	Percent of category total[4]
2524.90.00.00	Asbestos	772	$1,160,000	Brazil	100% of weight.
6811.40.00.00	Asbestos-cement products	1,290	930,000	Canada	97% of weight.
6812.91.10.00	Footwear	(5)	13,100	China, Italy[6]	100% of weight.
6812.91.90.00	Other, fabricated asbestos fibers; clothing[7]	1	42,200	Brazil, Taiwan, China, Germany[6]	95% of weight.
6812.92.00.00	Paper, millboard, and felt	NA	53,100	China, Japan[6]	78% of value.
6812.93.00.00	Compressed asbestos fiber jointing[7]	NA	42,200	Mexico, China, Germany[6]	100% of value.
6812.99.00.02	Yarn and thread[7]	111	986,000	Mexico	100% of weight.
6812.99.00.03	Cord and string[7]	(5)	2,150	Italy[6]	100% of weight.
6812.99.00.04	Woven or knitted fabric[7]	(5)	4,610	France[6]	100% of weight.
6812.99.00.10	Other, for use in civil aircraft[8]	(5)	3,000	Canada	100% of weight.
6812.99.00.20	Gaskets, packing, and seals[8]	14	129,000	China, Israel	82% of weight.
6812.99.00.55	Other, fabricated asbestos fiber[8]	NA	39,400	United Kingdom,[6] Republic of Korea	81% of value.
6813.20.00.10	Brake lining and pads, civil aircraft[8]	NA	415,000	Brazil	83% of value.
6813.20.00.15	Brake lining and pads, other[8]	NA	1,540,000	China, Argentina, Germany[6]	70% of value.
6813.20.00.20	Articles for use in civil aircraft[8]	NA	105,000	United Kingdom,[6] France[6]	91% of value.
6813.20.00.25	Other, friction materials[8]	NA	631,000	Canada, China	71% of value.

NA Not available.
[1]Harmonized Tariff Schedule of the United States.
[2]U.S. Customs declared value.
[3]Countries are listed in decreasing order of value or quantity.
[4]Percentage contribution of total imports by major import sources, by weight or value.
[5]Less than ½ unit.
[6]Material likely misclassified as asbestos or transshipment.
[7]Mixtures with a basis of asbestos or with a basis of asbestos and magnesium carbonate.
[8]Mixtures with a basis of asbestos, of other mineral substances, or of cellulose, whether or not combined.

Source: U.S. Census Bureau.

TABLE 7
ESTIMATED ASBESTOS CONSUMPTION, BY COUNTRY, 2009–12[1, 2, 3]

(Metric tons)

Region	2009	2010	2011	2012
Africa:				
Angola	1,660	1,660	1,320	880
Ghana	200	1,670	1,380	821
Nigeria	1,650	1,820	2,150	1,820
South Africa	130	-11	4,210	1,350
Zimbabwe	5,030 r	9,890	3,990	3,940
Other[4]	3,330	1,730 r	1,490	1,630
Total	12,000 r	16,800 r	14,500	10,400
Asia and the Middle East:				
Bangladesh	1,990	2,020	4,370	2,230
China	625,000 r	614,000	638,000	531,000
India	322,000 r	407,000 r	303,000 r	473,000
Indonesia	82,300	112,000	124,000	162,000
Iran	22,500	35,100	6,740	-60
Kazakhstan	40,200	-1,370	155,000	5,290
Kyrgyzstan	7,320	6,810	8,220	8,190
Malaysia	8,630	11,500	6,760	2,350
North Korea	1,550	1,140	1,690	1,250
Pakistan	12,600	13,300	9,390	10,100
Philippines	2,880	3,960	3,250	1,970
Russia	277,000	258,000 r	283,000 r	196,000
Sri Lanka	16,000	47,900	61,100	54,700
Thailand	103,000	79,300	81,400	58,000
Turkmenistan	4,140	3,200	5,240	6,680
Uzbekistan	98,600	98,600	17,100	104,000
Vietnam	80,900	67,400	60,400	78,900
Other[4]	28,600 r	-4,580 r	1,260 r	-6,170
Total[r]	1,730,000 r	1,750,000 r	1,770,000 r	1,690,000
Central and North America:				
Cuba	8,180	7,720	5,860	10,300
Mexico	17,100	13,800	10,200	17,000
Other[4]	-649	-34,300	-22,300	913
Total	24,700	-12,800	-6,260 r	28,300
Europe:				
Belarus	29,300	26,700	25,100	13,100
Ukraine	63,600	60,300	55,900	42,000
Other[4]	529 r	-3,220 r	-12 r	-4,610
Total	93,400 r	83,800 r	81,000 r	50,500
Oceania	--	20	45	34
South America:				
Bolivia	3,810	3,750	5,590	5,360
Brazil	141,000 r	171,000	189,000 r	168,000
Colombia	8,550	12,300	20,000	25,200
Ecuador	4,510	4,720	6,150	4,740
Other[4]	1,780 r	1,930 r	1,480 r	1,310
Total	159,000 r	194,000 r	223,000 r	204,000
Other areas (nonspecified)	-588	2,000	2,000	120
Grand total	2,020,000 r	2,040,000 r	2,080,000 r	1,980,000

[r]Revised. -- Zero.

[1]Calculated as country production plus imports minus exports. Production data were from table 8 and trade data were from the United Nations Commodity Trade database.

[2]Previously, Kazakhstan, Kyrgyzstan, Russia, Turkmenistan, and Uzbekistan were included under Europe to be consistent with country groupings in the early to middle 1900s. The table was revised to be consistent with current convention.

[3]Negative values are net exports.

[4]Includes countries with apparent consumption less than 1,000 metric tons or with net exports.

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TABLE 8
ASBESTOS: WORLD PRODUCTION, BY COUNTRY[1, 2]

(Metric tons)

Country[3]	2009	2010	2011	2012	2013
Argentina	322	341	105	100 e	100 e
Brazil	288,452	302,257	306,321	304,569 r	307,000
Canada[e]	150,000	100,000	50,000	--	--
China[e]	440,000	400,000	440,000	420,000	420,000
India[e]	261 [4]	254 [4]	250	245	240
Kazakhstan	230,000	214,100	223,100	241,200	242,000
Russia[e]	1,000,000 e	995,174 r	1,031,880 r	1,041,000 r	1,050,000
Zimbabwe	4,971	2,400 e	--	--	--
Total	2,110,000	2,010,000 r	2,050,000 r	2,010,000 r	2,020,000

[e]Estimated. [r]Revised. -- Zero.

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

[2]Marketable fiber production. Table includes data available through May 2, 2014.

[3]In addition to the countries listed, Afghanistan, North Korea, Romania, and Slovakia also produced asbestos, but output was not officially reported, and available general information was inadequate for the formulation of reliable estimates of output levels.

[4]Reported figure.

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