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2005 Minerals Yearbook

ASBESTOS

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

May 2006

Published by AsbestosClaims.Law
asbestosclaims.law/library/11040/1

ASBESTOS

By Robert L. Virta

Domestic survey data and tables were prepared by Subina W. Pandey, statistical assistant, and the world production table was prepared by Regina R. Coleman, international data coordinator.

Asbestos has not been mined in the United States since 2002 and imports, mostly from Canada, satisfied domestic manufacturing needs. U.S. apparent consumption declined to 2,530 metric tons (t) in 2005. World production was 2.40 million metric tons (Mt), an increase from 2.36 Mt in 2004.

Legislation and Government Programs

The Agency for Toxic Substances and Disease Registry (ATSDR) and the National Institute for Occupational Safety and Health (NIOSH) of the U.S. Department of Health and Human Services and the U.S. Environmental Protection Agency (EPA) continued with their exposure and health studies of residents and former vermiculite miners and millers in Libby, MT. The EPA continued its cleanup of asbestos-contaminated properties in Libby and conducted studies of asbestos exposure in El Dorado County, CA. The ATSDR continued to review health statistics for communities near vermiculite exfoliation plants located throughout the United States. The NIOSH continued its study of workers formerly employed at a South Carolina textile plant and to develop a model to better predict risk to humans from fiber exposure for which dose response data are not available (U.S. Environmental Protection Agency, 2005§[1]).

The Mine Safety and Health Administration continued to evaluate its proposed reduction of the 8-hour time-weighted average permissible exposure level to 0.1 fiber per cubic centimeter (f/cm^3) from 2 f/cm^3 for asbestos. A decision was scheduled for July 2006 (U.S. Department of Labor, 2005§).

Consumption

U.S. consumption of asbestos was 2,530 t in 2005, a decrease from 3,450 t in 2004 (table 1). Roofing products accounted for 55% of U.S. consumption; coating and compounds, 26%; other uses, 19%; and electrical insulation, less than 1%. Chrysotile was the only type of asbestos used in the United States. About 73% of the chrysotile used in the United States in 2005 was grade 7; the rest was grades 5, 4, and 3, in descending order of percentage (table 2).

Prices

The average free alongside ship (f.a.s.) unit value of asbestos fiber exports and reexports was $263 per metric ton in 2005, an increase from $211 per ton in 2004. The average U.S. customs unit value for all grades of imported asbestos increased to $561 per ton in 2005 from $234 per ton in 2004. The average value of imported crude chrysotile increased to $188 per ton in 2005 from $46 per ton in 2004 because of unusually low-value transshipments through Germany in 2004. The average unit value for imports of spinning-grade chrysotile from all sources was $150 per ton in 2005, unchanged from 2004. The unit value of other grades of chrysotile from all sources was $600 per ton, an increase from $318 per ton in 2004. This resulted because larger quantities of higher valued chrysotile were imported from Canada and transshipped through South Africa in 2005 than in 2004 (table 6). Average prices for chrysotile imported from Canada, which composed 88% of U.S. asbestos imports, are given in table 3.

Foreign Trade

Imports of asbestos products and products manufactured using asbestos substitutes are reported under the same Harmonized Tariff Schedule of the United States (HTS) codes (U.S. Census Bureau, 2001§). With the decline in use of asbestos products in the United States and bans on the manufacture of asbestos products in many other countries, it is likely that products manufactured using asbestos substitutes account for a significant portion of the product imports under some HTS categories. This fact must be taken into consideration when evaluating the trade data that follow.

The f.a.s. value of exported asbestos fibers increased to $398,000 in 2005 from $333,000 in 2004. Mexico was the leading importer of asbestos fiber from the United States. Canada was the leading importer of U.S. products manufactured using asbestos or asbestos substitutes, followed by Mexico, Japan, Thailand, Germany, the Republic of Korea, the United Kingdom, Saudi Arabia, Australia, and Brazil. These 10 countries accounted for 79% of the value of manufactured products reexported from the United States in 2005 (table 4).

In 2005, approximately 1,510 t of asbestos was exported (U.S. International Trade Commission, 2005§). The exports included asbestos crude, fiber, refuse, sand, and stucco. There has been no U.S. production since 2002, so exports were either from stockpiles or reexports of imported fiber (table 5).

Brake linings, clutch linings, disk pads, mounted brake linings manufactured using asbestos, other mineral substances, or cellulose accounted for 86% of the value of manufactured products that were exported or reexported in 2005 (table 5). Products in these categories composed more than 79% of the value of exports to each of the countries specified in table 4.

In 2005, Canada supplied 88% of the asbestos imported by the United States. Asbestos also was imported from Zimbabwe (table 6). Only chrysotile was imported into the United States in

[1]References that include a section mark (§) are found in the Internet References Cited section.

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2005. Based on the import source, asbestos listed under "Other, unspecified asbestos type" in table 6 probably was chrysotile.

The United States also imported $579 million worth of products with a basis of asbestos, asbestos and magnesium carbonate, cellulose fiber, or other mineral substances (U.S. International Trade Commission, 2005§) (table 7).

World Review

World production of asbestos was estimated to be 2.40 Mt in 2005, an increase from 2.36 Mt in 2004. Russia continued to be the leading producer of asbestos, followed by China, Kazakhstan, Canada, Brazil, and Zimbabwe. These countries accounted for 96% of the world production (table 8).

Outlook

Domestic use of asbestos probably will continue its downward trend in the United States because of liability issues. World production has remained relatively unchanged since 2002 and probably will remain between 2.3 and 2.4 Mt for the next couple of years.

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TABLE 1
SALIENT ASBESTOS STATISTICS[1]

		2001	2002	2003	2004	2005
United States:						
Production, sales	metric tons	5,260	2,720	--	--	--
Exports and reexports:[2]						
Unmanufactured, value	thousands	$4,890	$2,020	$920	$333	$398
Asbestos products, value	do.	$298,000	$203,000	$290,000	$341,000	$374,000
Imports for consumption, unmanufactured:						
Quantity	metric tons	13,100	6,850	4,650	3,450	2,530
Value[3]	thousands	$2,640	$1,770	$5,840	$806	$1,420
Consumption, apparent[4]	metric tons	13,100	6,850	4,650	3,450	2,530
World, production	do.	2,060,000 r	2,320,000 r	2,360,000 r	2,360,000 r	2,400,000 e

eEstimated. rRevised. -- Zero.

[1]Data are rounded to no more than three significant digits.

[2]Free alongside ship value; includes exports of crudes, fibers, stucco, sand, and refuse. May also include nonasbestos materials.

[3]U.S. customs declared value.

[4]Production plus imports minus producer exports of asbestos fiber plus adjustments in Government and industry stocks.

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

(Metric tons)

	Chrysotile						
End use	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Unspecified grade	Total
2004	--	29	240	--	1,990	1,190	3,450
2005:							
Coatings and compounds	--	--	293	--	367	--	660
Electrical insulation	11	--	--	--	--	--	11
Roofing products	--	--	--	--	1,380	--	1,380
Other	10	84	--	--	87	298	479
Total	21	84	293	--	1,840	298	2,530

-- Zero.

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

[2]Estimated distribution based upon data provided by the Chrysotile Institute, Montreal, Quebec, Canada.

TABLE 3
CUSTOMS UNIT VALUE OF IMPORTED ASBESTOS

(Dollars per metric ton)

	2004	2005
Canada, chrysotile:		
Crude	193	188
Spinning	157	170
Other	213	334

Source: U.S. Census Bureau.

TABLE 4
VALUE OF U.S. EXPORTS AND REEXPORTS OF ASBESTOS FIBERS AND PRODUCTS[1, 2]

(Thousand dollars)

	2004			2005		
Country	Unmanufactured fiber[3]	Manufactured products[4]	Total	Unmanufactured fiber[3]	Manufactured products[4]	Total
Australia	--	3,470	3,470	--	4,060	4,060
Brazil	--	4,760	4,670	--	3,800	3,800
Canada	--	169,000	169,000	--	177,000	177,000
Germany	--	9,180	9,180	--	10,100	10,100
Japan	--	15,100	15,100	--	15,500	15,500
Korea, Republic of	--	11,500	11,500	--	9,450	9,450
Kuwait	--	999	999	--	1,150	1,150
Mexico	317	44,200	44,500	347	46,300	46,600
Saudi Arabia	--	5,040	5,040	--	7,160	7,160
Thailand	--	13,000	13,000	--	12,000	12,000
Turkey	--	129	129	--	140	140
United Kingdom	--	7,360	7,360	--	8,780	8,780
Venezuela	--	1,410	1,410	--	1,590	1,590
Other	16	56,300	56,300	51	76,900	77,000
Total	333	341,000	342,000	398	374,000	375,000

See footnotes at end of table.

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TABLE 4—Continued
VALUE OF U.S. EXPORTS AND REEXPORTS OF ASBESTOS FIBERS AND PRODUCTS[1, 2]

-- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Free alongside ship value.
[3]Includes exports of crudes, fibers, stucco, sand, and refuse. May also include nonasbestos materials.
[4]Includes products manufactured using asbestos, cellulose fiber, and other asbestos substitutes.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS AND REEXPORTS OF ASBESTOS AND ASBESTOS PRODUCTS[1]

	2004		2005	
	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)
Unmanufactured, asbestos[3]	1,580	$333,000	1,510	$398,000
Manufactured:				
Brake linings and disk brake pads[4]	NA	275,000	NA	293,000
Clutch facings and linings[5]	NA	23,300	NA	28,600
Clothing, cord, fabric, yarn	NA	2,110	NA	--
Gaskets, packing and seals	NA	1,810	NA	1,480
Panel, sheet, tile, tube[6]	NA	27,700	NA	39,700
Paper and millboard	NA	860	NA	983
Other articles[7]	NA	10,200	NA	10,700
Total	NA	341,000	NA	374,000

-- Zero. 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]Includes asbestos and cellulose fiber brakes and similar materials.
[5]Includes clutches and other friction materials, excluding brakes and brake pads.
[6]Includes asbestos cement and cellulose fiber cement products.
[7]Includes asbestos and cellulose fiber products.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF ASBESTOS FIBERS, BY TYPE AND ORIGIN[1]

	Canada		South Africa		Other		Total	
Type	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)
2004:								
Chrysotile:								
Crude	254	$49	--	--	1,020	$10	1,270	$59
Spinning fibers	20	3	--	--	--	--	20	3
All other	1,650	258	122	$239	45	82	1,820	579
Other, unspecified asbestos type	334	165	--	--	--	--	334	165
Total	2,260	475	122	239	1,060	92	3,450	806

See footnotes at end of table.

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TABLE 6—Continued
U.S. IMPORTS FOR CONSUMPTION OF ASBESTOS FIBERS, BY TYPE AND ORIGIN[1]

Type	Canada		South Africa		Other		Total	
	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)	Quantity (metric tons)	Value[2] (thousands)
2005:								
Chrysotile:								
Crude	288	54	--	--	--	--	288	54
Spinning fibers	20	3	--	--	--	--	20	3
Milled, grade 4	--	--	32 [3]	157 [3]	266	562	298	719
All other	1,510	366	--	--	--	--	1,510	366
Other, unspecified asbestos type	417	278	--	--	--	--	417	278
Total	2,240	701	32 [3]	157 [3]	266	562	2,530	1,420

-- Zero.

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

[2]U.S. customs declared value.

[3]These are probably transhipments of chrysotile from Zimbabwe through South Africa.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS OF PRODUCTS WITH BASIS OF ASBESTOS, CELLULOSE, OR OTHER MINERALS IN 2005

HTS[1] code	Category	Quantity (metric tons)	Value	Major sources[2]	Percentage of category total[3]
2524.00.00.00	Asbestos	2,530	$1,420,000	Canada	88% of weight.
6811.10.00.00	Corrugated cement sheet[4]	705	421,000	Finland[5], Denmark[5]	80% of weight.
6811.20.00.00	Flat cement panel, sheet, and tile[4]	91,400	38,200,000	Mexico, Canada, Chile, Malaysia	94% of weight.
6811.30.00.00	Cement pipe, tube, and pipe fittings[4]	353	171,000	Mexico	99% of weight.
6811.90.00.00	Other cement products[4]	3,070	2,300,000	Japan	88% of weight.
6812.50.00.00	Fabricated asbestos fibers; clothing[6]	9	50,500	Denmark[5]	82% of value.
6812.60.00.00	Felt, millboard, and paper	NA	9,230	Denmark[5], Japan	100% of value.
6812.70.00.00	Compressed asbestos fiber jointing	NA	694,000	Canada	87% of value.
6812.90.01.01	Other, miscellaneous[6]	1	5,070	China	100% of value.
6812.90.01.02	Yarn and thread[6]	99	437,000	Mexico	100% of value.
6812.90.01.03	Cord and string[6]	1	30,500	Japan, Taiwan, Germany	83% of value.
6812.90.01.04	Woven or knitted fabric[6]	50	460,000	South Africa	99% of value.
6812.90.01.10	Articles for use in civil aircraft[6]	NA	16,700	Japan, United Kingdom[5], Germany[5], France	100% of value.
6812.90.01.20	Gaskets, packing, and seals[6]	154	934,000	India, Japan	60% of value.
6812.90.01.25	Other, building materials[6]	NA	144,000	Australia	98% of value.
6812.90.01.55	Other, fabricated asbestos fiber[6]	NA	130,000	France, United Kingdom[5]	74% of value.
6813.10.00.10	Brake lining and pads, civil aircraft[7]	NA	3,600,000	France[5], United Kingdom[5]	95% of value.
6813.10.00.50	Brake lining and pads, other[7]	NA	110,000,000	Brazil, China, Canada	71% of value.
6813.90.00.10	Other, articles, civil aircraft[7]	NA	332,000	United Kingdom[5]	92% of value.
6813.90.00.50	Other, friction materials[7]	NA	25,700,000	United Kingdom[5], Japan, Mexico	84% of value.
8708.31.00.00	Mounted brake linings for tractors	NA	601,000	Germany[5], Taiwan	52% of weight.
8708.31.50.00	Mounted brake linings, other	NA	395,000,000	Japan[5], Canada	60% of weight.

NA Not available.

[1]Harmonized Tariff Schedule of the United States.

[2]Countries are listed in decreasing order.

[3]Percentage contribution of total imports by major import sources, by weight or value.

[4]Articles of asbestos-cement, of cellulose fiber-cement or the like.

[5]Source likely a supplier of nonasbestos products only.

[6]Mixtures with basis of asbestos or with a basis of asbestos and magnesium carbonate.

[7]Articles with a basis of asbestos, of other mineral substances, or of cellulose.

Source: U.S. Census Bureau.

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TABLE 8

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

(Metric tons)

Country[3]	2001	2002	2003	2004	2005[e]
Argentina	203	155	166	267 [r]	270
Brazil, fiber	172,695	194,750	194,350	194,800	195,000
Bulgaria[e]	350	300	300	300	300
Canada	276,790	240,500	200,500	200,000 [e]	200,000
China[e]	310,000	562,000 [r]	500,000 [r]	510,000 [r]	520,000
Colombia, crude ore	96,140	62,785	60,000 [e]	60,000 [e]	60,000
Egypt[e]	-- [r]	-- [r]	-- [r]	-- [r]	--
India[e]	21,000	18,000	19,000	18,000	19,000
Iran[e]	2,000	1,500	1,470 [r, 4]	6,000 [r, 4]	5,000
Japan[e]	-- [r]	-- [r]	-- [r]	-- [r]	--
Kazakhstan	271,300	291,100	354,500	346,500	355,000
Russia[e]	750,000	775,000	878,000 [4]	923,000 [r, 4]	925,000
Serbia and Montenegro	194	372	111 [r]	110 [r]	100
South Africa, chrysotile	13,393	--	6,218 [r]	-- [r]	-- [4]
United States, sold or used by producers	5,260	2,720	--	--	--
Zimbabwe	136,327	168,000 [e]	147,000	104,000 [r]	122,041 [4]
Total	2,060,000 [r]	2,320,000 [r]	2,360,000 [r]	2,360,000 [r]	2,400,000

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

[1]World totals, U.S. data, 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 April 8, 2006.

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

[4]Reported figure.

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