Asbestos

By Robert A. Clifton [1]

Shipments of asbestos in the United States increased less than 1% but established another record high in 1972. There was no readily apparent single reason that could explain the increased demand for asbestos. Imports were 8% above 1971 levels.

The world's largest producer, Canada, increased shipments to its largest market, the United States, by 10%; its total shipments were 3% over the 1971 total.

Legislation and Government Programs.—The Environmental Protection Agency (EPA) had not published its asbestos emission standards by yearend, but their latest proposal recognized the adequacy of Bureau of Mines controls in mines and mills and would only control visible emissions from mill effluent gases. In 1972 the General Services Administration (GSA) reduced government inventories by disposing of 1,040 short tons of amosite, 11,478 tons of crocidolite, and 656 tons of chrysotile. The strategic grades of asbestos formerly under the Rhodesian Sanctions began to appear again on the U.S. market.

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Table 1.—Salient asbestos statistics

	1968	1969	1970	1971	1972
United States:					
Production (sales)—short tons	120,690	125,936	125,314	130,882	131,663
Value—thousands	$10,406	$10,648	$10,696	$12,174	$13,409
Exports and reexports (unmanufactured)—short tons	41,236	36,173	46,585	53,678	58,624
Value—thousands	$4,679	$4,979	$6,996	$7,863	$9,051
Exports and reexports of asbestos products (value)—thousands	$24,527	$28,183	$25,391	$31,430	$32,110
Imports for consumption (unmanufactured)—short tons	737,909	694,558	649,402	681,367	735,515
Value—thousands	$72,930	$76,422	$75,146	$80,090	$87,732
Consumption, apparent [1] short tons	817,363	784,321	728,131	758,571	808,554
World: Production—do	3,315,301	3,599,123	3,851,251	3,951,373	4,083,340

[1] Measured by quantity produced, plus imports, minus exports.

Table 2.—Stockpile objective and Government inventories as of October 31, 1972

(Short tons)

Mineral	Stockpile objective	Inventories			
		National	Supplemental	Defense Production Act	Total
Amosite	18,400	11,705	46,893	--	58,598
Chrysotile	13,700	6,079	5,916	242	12,237
Subspecification	--	20	1,032	242	1,294
Crocidolite	None	1,554	23,890	--	25,444

Environmental Impact.—The expected effects of environmental regulations on the asbestos market were not apparent in 1972. The effect may just be postponed, because the Office of Safety and Health Administration (OSHA) of the Department of Labor did not promulgate its regulations until June 7, 1972, and EPA had not pro-

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mulgated its regulation by yearend. The OSHA Threshold Limit Value (TLV) retained its previous emergency value of five fibers greater than 5 micrometers in length per milliliter. The five fiber TLV is scheduled for reduction to two fibers in 1976. This schedule might be shortened if union and activist pressures continue.

The final prepublication proposals for EPA regulations differed greatly from the originals as far as asbestos mining was concerned. The mines were omitted entirely as not needing EPA regulation, and the only standard applicable to mills pertained to "visible emissions to the outside air."

Some States, having written acceptable regulations, are now the environmental control regulating agency, with their regulations superseding, at least partially, those of the Bureau of Mines, OSHA and EPA.

DOMESTIC PRODUCTION

U.S. mines shipped less than 1% more asbestos in 1972 than in 1971. The value increased 10%. Four States produced asbestos; California, with 69%, was the leader, followed in order by Vermont, Arizona, and North Carolina.

The California segment of the asbestos industry continued to grow, with a 4% increase in production to 90,967 tons, and was led by the Pacific Asbestos Corp. mine in Calaveras County. The largest producing County was Fresno, with the Coalinga Asbestos Co., Inc., and Atlas Asbestos Corp. mines. Union Carbide Corp. had significant production in San Benito County. The State's increased production realized an $867,229 increase in value.

The GAF Corp. mine in Orleans County, Vt., remained the U.S. asbestos mine with the highest production and highest product value. With only the Jaquays Mining Corp. mine in Gila County operating again in 1972, Arizona production increased 2%. The production in North Carolina of Powhatan Mining Co. declined another 14% in 1972. U.S. asbestos producers and mine sites are as follows:

State and company	County	Name of mine	Type of asbestos
Arizona: Jaquays Mining Corp	Gila	Chrysotile	Chrysotile.
California:			
Atlas Asbestos Corp	Fresno	Santa Cruz	Do.
Coalinga Asbestos Co., Inc	do	Christie	Do.
Pacific Asbestos Corp	Calaveras	Pacific Asbestos	Do.
Union Carbide Corp	San Benito	Santa Rita	Do.
North Carolina:			
Powhatan Mining Co	Yancey	Hippy	Anthophyllite.
Do	Jackson	Boot Hill	Do.
Vermont: GAF Corp	Orleans	Lowell	Chrysotile.

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Table 3.—Asbestos production and consumption

Year	Number of mines	Production			Imports				Exports (short tons)	Apparent consumption (short tons)
		Quantity (short tons)	Value	Unit value	Quantity (short tons)	Value	Unit value	% of consumption		
1873	--	--	--	--	NA	$18	NA	100	--	NA
1874	--	--	--	--	NA	152	NA	100	--	NA
1875	--	--	--	--	NA	4,706	NA	100	--	NA
1876	--	--	--	--	NA	5,485	NA	100	--	NA
1877	--	--	--	--	NA	1,671	NA	100	--	NA
1878	--	--	--	--	NA	3,536	NA	100	--	NA
1879	--	--	--	--	[1] 49	3,204	[2] $65	100	--	49
1880	NA	150	$4,312	$29	[1] 150	9,736	[2] 65	50	--	300
1881	NA	200	7,000	35	[1] 425	27,717	[2] 65	68	--	626
1882	NA	1,200	36,000	30	[1] 234	15,235	[2] 65	16	--	1,434
1883	NA	1,000	30,000	30	[1] 338	24,369	[2] 72	25	--	1,338
1884	NA	1,000	30,000	30	[1] 739	48,755	[2] 66	42	--	1,739
1885	NA	300	9,000	30	[1] 1,262	73,026	[2] 58	81	--	1,562
1886	NA	200	6,000	30	[1] 2,237	134,193	[2] 60	92	--	2,437
1887	NA	150	4,500	30	[1] 2,863	140,264	[2] 49	95	--	3,013
1888	NA	100	3,000	30	[1] 2,907	168,584	[2] 58	97	--	3,007
1889	NA	30	1,800	60	[1] 3,632	254,239	[2] 70	99	--	3,662
1890	NA	71	4,560	64	[1] 1,973	252,557	[2] 128	97	--	2,044
1891	NA	66	3,960	60	[1] 3,274	353,589	[2] 108	98	--	3,340
1892	NA	104	6,416	62	[1] 4,101	262,433	[2] 64	98	--	4,209
1893	NA	50	2,500	50	[1] 3,658	175,602	[2] 48	99	--	3,708
1894	NA	325	4,463	14	[1] 4,364	240,029	[2] 55	88	--	4,959
1895	NA	795	13,525	17	[1] 5,361	225,147	[2] 42	87	--	6,156
1896	NA	504	6,100	12	[1] 6,545	229,084	[2] 35	93	--	7,049
1897	NA	580	6,450	11	[3]	263,640	[3]	[3]	--	[3]
1898	NA	605	10,300	17	[3]	287,636	[3]	[3]	--	[3]
1899	NA	681	11,740	17	[3]	303,119	[3]	[3]	--	[3]
1900	NA	1,054	16,310	15	[3]	331,796	[3]	[3]	--	[3]
1901	2	747	13,498	18	[3]	667,087	[3]	[3]	--	[3]
1902	2	1,005	16,200	16	[3]	729,421	[3]	[3]	--	[3]
1903	4	887	16,760	19	[3]	657,269	[3]	[3]	--	[3]
1904	3	1,480	25,740	17	[3]	700,572	[3]	[3]	--	[3]
1905	6	3,109	42,975	14	[1] 26,761	776,362	[2] 29	90	--	29,870
1906	6	1,695	28,565	17	[1] 30,620	1,010,454	[2] 33	94	--	32,315
1907	2	653	11,899	18	[1] 27,603	1,104,109	[2] 40	99	325	27,931
1908	2	936	19,624	21	28,114	1,068,322	[2] 38	98	300	28,750
1909	4	3,085	62,603	20	27,591	993,278	[2] 36	90	--	30,676
1910	4	3,693	68,357	19	53,211	1,122,085	21	94	--	56,904
1911	4	7,604	119,935	16	63,979	1,318,539	21	89	--	71,583
1912	3	4,403	87,959	20	71,523	1,456,012	20	94	--	75,926
1913	3	1,100	11,000	10	86,737	1,928,705	22	99	--	87,837
1914	5	1,247	18,965	15	71,866	1,407,758	20	98	--	73,113
1915	5	1,731	76,952	44	93,566	1,981,483	21	98	--	95,297
1916	5	1,479	448,214	303	116,162	3,303,470	28	99	--	117,641
1917	8	1,683	506,056	301	134,108	4,521,172	34	99	708	135,083
1918	6	802	121,687	152	137,700	6,337,585	46	99	697	137,805

See footnotes at end of table.

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Table 3.—Asbestos production and consumption—Continued

Year	Number of mines	Production			Imports				Exports (short tons)	Apparent consumption (short tons)
		Quantity (short tons)	Value	Unit value	Quantity (short tons)	Value	Unit value	% of consumption		
1919	12	1,761	$248,265	$214	135,270	$7,369,685	$54	100	1,119	135,312
1920	14	1,648	650,311	395	167,558	9,120,253	54	98	--	170,854
1921	9	831	336,968	405	72,463	2,948,302	41	99	--	73,294
1922	8	67	10,120	151	149,427	5,144,700	34	100	376	149,118
1923	5	227	9,626	42	212,420	7,445,143	35	100	680	211,967
1924	10	300	42,526	142	183,250	5,602,945	31	100	1,270	182,280
1925	7	1,258	51,700	41	230,520	7,134,302	31	100	1,109	230,669
1926	6	1,358	134,731	99	257,621	8,142,505	32	100	1,104	257,875
1927	7	2,981	336,882	113	223,693	8,150,340	36	99	309	226,365
1928	9	2,239	351,178	157	230,595	9,017,891	39	99	850	231,984
1929	11	3,155	351,004	111	262,427	11,153,017	42	99	709	264,873
1930	8	4,242	289,284	68	208,681	7,064,824	34	98	771	212,152
1931	6	3,228	118,967	37	136,361	3,749,340	27	99	1,714	137,875
1932	6	3,559	105,292	30	96,754	2,250,200	23	98	1,707	98,606
1933	5	4,745	130,677	28	119,494	3,540,675	30	97	1,378	122,861
1934	5	5,087	158,347	31	120,334	3,377,994	28	97	1,669	123,752
1935	4	8,920	292,927	33	166,585	5,125,413	31	95	850	174,655
1936	7	11,064	314,161	28	243,602	7,524,937	31	97	3,744	250,870
1937	10	12,079	344,644	29	307,188	10,470,208	34	97	3,004	316,263
1938	6	10,440	247,264	24	179,490	6,160,602	34	96	2,780	187,150
1939	12	15,459	512,788	33	242,561	9,094,538	37	95	2,473	255,547
1940	15	20,060	674,508	34	246,613	10,034,433	41	94	4,474	262,199
1941	17	24,391	725,753	30	419,446	17,913,265	43	96	4,846	438,991
1942	11	15,481	498,857	32	419,242	21,217,650	51	97	774	433,949
1943	11	6,014	334,815	56	440,255	23,053,524	52	99	364	445,905
1944	11	6,667	380,334	57	400,956	18,552,940	46	98	475	407,148
1945	11	12,226	417,348	34	374,199	16,284,915	44	99	8,550	377,875
1946	8	14,075	504,764	36	456,688	18,731,378	41	99	11,011	459,752
1947	10	24,035	918,558	38	594,839	29,821,519	50	96	2,087	616,787
1948	17	37,092	1,806,261	49	647,881	37,974,092	59	95	6,530	678,443
1949	9	43,387	2,614,416	60	515,303	33,939,582	66	97	20,045	532,708
1950	16	42,434	2,925,050	69	705,458	47,284,205	67	97	20,890	727,002
1951	15	51,645	3,912,500	76	761,873	58,521,046	77	96	16,526	796,992
1952	13	53,864	4,713,032	87	709,419	61,595,900	87	94	10,724	752,559
1953	18	54,456	4,857,359	89	692,245	59,753,583	86	93	3,076	743,625
1954	21	47,621	4,697,962	99	678,390	55,856,606	82	94	1,894	724,117
1955	17	44,580	4,487,428	101	740,423	60,957,578	82	95	2,787	782,216
1956	13	41,312	4,742,446	115	689,034	61,829,275	90	95	2,950	727,396
1957	15	43,653	4,917,548	113	682,732	60,139,815	88	94	2,893	723,492
1958	13	43,979	5,127,000	117	644,331	58,314,000	91	94	3,026	685,284
1959	12	45,459	4,391,000	97	713,047	65,006,000	91	95	4,461	754,045
1960	14	45,223	4,231,000	94	669,495	63,345,000	95	94	5,525	709,193
1961	12	52,814	4,347,000	82	616,529	58,942,000	96	93	3,799	665,544
1962	11	53,190	4,677,000	88	676,027	64,150,000	95	93	2,949	726,268
1963	11	66,606	5,425,000	81	667,860	61,739,000	92	92	10,044	724,422

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1964	12	101,092	8,143,000	81	739,361	72,973,000	99	91	27,147	813,306
1965	12	118,275	10,162,000	86	719,559	70,457,000	98	91	43,126	794,408
1966	10	125,928	11,056,000	88	726,459	73,100,000	101	90	46,996	805,391
1967	9	123,189	11,102,000	90	645,112	65,743,000	102	90	47,718	720,583
1968	9	120,690	10,406,000	86	737,909	72,930,000	99	90	41,236	817,363
1969	9	125,936	10,648,000	85	694,558	76,422,000	110	89	36,173	784,321
1970	10	125,314	10,696,000	85	649,402	75,146,000	116	89	46,585	728,131
1971	9	130,882	12,174,000	93	681,367	80,090,000	118	90	53,678	758,571
1972	8	131,663	13,409,000	102	735,515	87,732,000	119	91	58,624	808,554

NA Not available.
[1] Estimated by assigning Canadian values to all imports.
[2] Canadian shipment values.
[3] During these years Canadian production figures and values included "Asbestic" (tailings and short fibers), making extraction of an average fiber value impossible.

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CONSUMPTION AND USES

In the 100th year of commercial asbestos use in the United States, some new definitive data on consumption have been collected. These data, because they were collected on a greatly revised form from an expanded list of consumers, bear no relationship to the estimates of previous years, and comparisons are inappropriate. They are shown in table 5. The chrysotile data in the table have been adjusted to reflect 95% of the apparent consumption. The other data are presented as reported.

It is no surprise that with a few thousand known end uses, 15% of consumption falls into minor categories or "Other." The eight major uses are construction 42%, floor tile 11%, friction products 10%, paper 9%, asphalt felts 6%, packing and gaskets 4%, insulation 2%, and textiles 1%.

Analysis of the newly available data on U.S. consumption of asbestos will be facilitated by some rather arbitrary combination of chrysotile grades. Table 4 shows these combinations, which disregard chemical variances, strength, electrical properties, and other differences other than uses based loosely on the Quebec Asbestos Mining Association standards.

Crudes, and Groups 1, 2, while not milled, have the same ultimate textile uses as Group 3, and are combined as BM I (spinning). Groups 4 and 5 comprise BM II (shingle and paper). Groups 6 and 7 become BM III (shorts).

Note that the spinning grades (BM I) are found only in four of the major uses. These fibers comprised 3% of the reported tonnages. Shingle and paper grades (BM II) were 47% of the weight of the fibers reported and were in all the major uses but textiles. The remainder, 50% of the reported fibers, were shorts (BM III) and were found in every major use.

The construction field used 24% of the anthophyllite reported, and friction products used 29%. These were the only major uses reported, except for a tiny amount in textiles.

Seventy-two percent of the amosite reported was used for insulation, 18% for construction, and 6% for asphalt felts.

Construction accounted for 88% of the crocidolite and paper for 1%.

Overall consumption in 1972 increased nearly 7% over that of 1971, with no usage trends apparent.

Table 4.—Bureau of Mines chrysotile groupings

BM I (spinning)	BM II (shingle and paper)	BM III (shorts)
	CANADA	
Group 1 (crude) Group 2 (crude) Group 3 AAA, AA, A, AC, CC	Group 4 Group 5 AK, CP, AS, CT, AX, CY, AY	Group 6 Group 7
	ARIZONA	
No. 1 Crude No. 2 Crude AAA	Group No. 3, Group No. 4 Group No. 5	Group No. 6 Group No. 7
	CALIFORNIA	
	Grade 4, Grade 5	Grade 6, Grade 7
	VERMONT	
Grade 3	Grade 4, Grade 5	Grade 6, Grade 7, Grade 8

Table 5.—U.S. asbestos consumption 1972

(Short tons)

End uses	Chrysotile (adjusted)				Antho-phyllite (reported)	Amosite (reported)	Crocidolite (reported)
	BM I	BM II	BM III	Total			
Construction	--	214,800	108,600	323,400	218	1,017	13,795
Floor tile	--	4,700	80,000	84,700	--	--	--
Friction products	5,400	24,000	47,600	77,000	262	--	--
Paper	--	2,100	67,200	69,300	--	--	159
Asphalt felts	--	17,000	29,200	46,200	--	351	--
Packing and gaskets	2,000	18,000	10,800	30,800	--	--	24
Insulation	2,600	2,300	10,500	15,400	--	4,131	--
Textiles	7,600	--	100	7,700	3	--	20
Other	1,000	80,800	33,700	115,500	420	206	1,625
Total	18,600	363,700	387,700	770,000	903	5,705	15,623

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PRICES

Quoted prices for Quebec asbestos in 1972 were unchanged since July 1, 1971. On January 1, 1973, British Columbia spinning grades were to rise 2% and cement grades 5%. The price of Arizona asbestos was expected to remain unchanged.

Prices for Arizona chrysotile asbestos have remained unchanged since August 1, 1968. Quotations, f.o.b. Globe, were as follows:

Grade	Description	Per short ton
Group 1	Crude	$1,410–$1,650
Group 2	----do	700– 950
AAA	----------	800
Group 3	Nonferrous filtering and spinning	425– 700
Group 4	Nonferrous plastic and filtering	400– 500
Group 5	Plastic and filtering	385– 425
Group 6	Refuse or shorts	250
Group 7	----do	65– 90

As of January 3, 1973, Vermont Chrysotile asbestos, f.o.b. Morrisville, was priced as follows:

Grade	Description	Per short ton
Grade 4	Shingle fiber	$218.00–$371.00
Grade 5	Paper fiber	157.50– 185.00
Grade 6	Waste, stucco, or plaster fiber	114.00
Grade 7	Shorts and floats	43.50– 95.00

Quotations for Canadian (Quebec) chrysotile, f.o.b. mine, were as follows, as of July 1, 1971:

Grade	Description	Per short ton
Group 1	Crude	Can $1,615
Group 2	----do	875
Group 3	Spinning fiber	412–675
Group 4	Shingle fiber	227–383
Group 5	Paper fiber	164–195
Group 6	Waste, stucco, or plaster	120
Group 7	Refuse or shorts	52–100

The increased demand for asbestos used in cement products (groups 5, 7) resulted in greater price increases in these categories. The last price rise for British Columbia emphasizes this point.[2]

Prices for British Columbia, Canada, chrysotile asbestos, f.o.b. Vancouver, will rise January 1, 1973 to the following:

Grade	Description	Per short ton
AAA	Nonferrous spinning fiber	Can $595
AA	----do	711
A	----do	541
AC	Asbestos cement fiber	388
AK	Shingle fiber	276
CP	----do	261
AS	----do	240
CT	----do	235
AX	----do	219
CY	----do	155
AY	----do	155

Privately negotiated sales are typical of the African asbestos producers. As this rules out market quotations, the following figures are averages, regardless of grade, of the values of South African imports calculated from U.S. Department of Commerce Data:

Type	Per short ton			
	1969	1970	1971	1972[1]
Amosite	$153	$160	$164	$188
Crocidolite	189	196	212	222
Chrysotile	192	198	120	211

[1] First 8-month data on imports, U.S. Bureau of the Census.

[2] Asbestos. V. 54, No. 7, January 1973, p. 36.

FOREIGN TRADE

The value of exports of asbestos products manufactured in the United States increased 2 percent over the value of those exported in 1971. Five of the nearly 100 countries buying these products accounted for better than 60% of the foreign sales. They were Canada (44%), West Germany (9%), the United Kingdom (4%), Venezuela (2%), and Australia (4%).

In 1972 the United States imported 91% of its asbestos needs. This bettered the 1971 percentage, because of increased demand. Canada provided 97% of the imports, the Republic of South Africa provided 2%, and nine other countries, 1%. Chrysotile, with 98%, dominated the imported types. There was a near 10% increase in the dollar value of imported fibers. The Rhodesian values in table 7 reflect the recent lifting of the 1967 embargo.

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Table 6.—U.S. exports and reexports of asbestos and asbestos products

Product	1971 Quantity	1971 Value (thousands)	1972 Quantity	1972 Value (thousands)
EXPORTS				
Unmanufactured:				
Crude and spinning fibers—short tons	6,830	$1,376	22,081	$3,786
Nonspinning fibers—do	21,257	3,453		
Waste and refuse—do	24,115	2,742	29,711	3,835
Total—do	52,202	7,571	51,792	7,621
Products:				
Gaskets and packing—do	2,299	7,698	2,409	7,462
Brake linings—do	r 5,258	r 7,185	4,496	6,654
Clutch facings, including linings—number	1,920,176	1,572	2,727,573	1,908
Textiles and yarn—short tons	6,673	3,397	8,643	4,863
Shingles and clapboard—do	12,696	2,580	10,366	2,308
Articles of asbestos cement—do	9,603	3,080	9,649	2,148
Manufactures, n.e.c	NA	5,897	NA	6,715
Total	--	r 31,409	--	32,058
REEXPORTS				
Unmanufactured:				
Crude and spinning fibers—short tons	1,141	229	6,287	1,367
Nonspinning fibers—do	335	63		
Waste and refuse—do	--	--	545	63
Total—do	1,476	292	6,832	1,430
Products:				
Gaskets and packing—do	1	5	254	11
Brake linings—do	6	10	--	--
Clutch facings, including linings—number	422	1	--	--
Textiles and yarn—short tons	--	--	5	12
Shingles and clapboard—do	--	--	--	--
Articles of asbestos cement—do	--	--	100	29
Manufactures, n.e.c	NA	5	NA	--
Total	--	21	--	52

r Revised. NA Not available.

Table 7.—U.S. imports for consumption of asbestos (unmanufactured), by class and country

Year and country	Crude (including blue fiber) Short tons	Crude (including blue fiber) Value (thousands)	Textile fiber Short tons	Textile fiber Value (thousands)	All other Short tons	All other Value (thousands)	Total Short tons	Total Value (thousands)
1971								
Canada	240	$96	11,620	$5,306	636,782	$69,577	648,642	$74,979
Finland	--	--	--	--	4,182	342	4,182	342
Italy	2	4	--	--	--	--	2	4
Mexico	--	--	18	8	40	3	58	11
Mozambique	203	43	--	--	157	31	360	74
South Africa, Republic of	23,188	4,104	1	(1)	1,822	399	25,011	4,503
Swaziland	160	46	--	--	230	59	390	105
United Kingdom	--	--	--	--	109	3	109	3
Yugoslavia	--	--	--	--	2,613	69	2,613	69
Total	23,793	4,293	11,639	5,314	645,935	70,483	681,367	80,090
1972								
Bolivia	29	3	--	--	--	--	29	3
Canada	66	10	11,599	5,316	702,230	78,577	713,895	83,903
Finland	--	--	--	--	2,243	160	2,243	160
Greece	--	--	--	--	6	1	6	1
Italy	--	--	--	--	2	3	2	3
Mozambique	428	85	--	--	597	118	1,025	203
Rhodesia, Southern	200	99	--	--	--	--	200	99
South Africa, Republic of	14,938	3,056	16	7	1,431	220	16,385	3,283
Swaziland	40	21	--	--	--	--	40	21
Switzerland	--	--	--	--	4	1	4	1
Yugoslavia	--	--	843	12	843	43	1,686	55
Total	15,701	3,274	12,458	5,335	707,356	79,123	735,515	87,732

1 Less than ½ uuit.

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Table 8.—U.S. imports for consumption of asbestos from specified countries by grade

(Short tons)

Grade	1971		1972		
	Canada	Republic of South Africa	Canada	Southern Rhodesia	Republic of South Africa
Chrysotile:					
Crudes	188	1,655	66	200	2,439
Spinning fibers	11,620	1	11,599	--	16
All other	636,782	1,822	702,230	--	1,431
Crocidolite (blue)	52	6,953	--	--	5,374
Amosite	--	14,580	--	--	7,125
Total	648,642	25,011	713,895	200	16,385

WORLD REVIEW

Trend analyses such as those shown in figure 1 can reveal a great deal about the changes becoming apparent in the world market. The data were derived by using all the information available for the last 10 years to establish trends by linear regression analysis. The full 10-year figures were available for the United States and Canada, and at least 4 years were available for each of the other countries.

If each of the major consuming countries kept a near-constant share of an expanding market, the result would be a straight line, as shown by Canada. The U.S.S.R. and Japan typify those countries whose consumption rate has increased faster than the world production rate. The United States and the United Kingdom have gone the opposite way.

The United States, with a remarkably stable consumption rate, is taking a smaller share of the expanding market, and it is apparent that it will soon be supplanted by the U.S.S.R. as the world's largest consumer, if this has not already happened.

The same kind of analysis of Canadian data can also be informative, as shown in figure 2. Canada is both the world's largest producer and exporter of asbestos, and a major consumer as well. The marked divergence of the value and production lines shows graphically the inflationary trends. The upward slope of the production and export lines is indicative of the expanding world market. The slight divergence between the production and export lines illustrates that Canada's consumption growth rate exceeds that of production and that an increasing amount of Canadian asbestos is being used domestically.

Australia.—The Woodsreef mine and mill began operation in January 1972 and had such promising prospects that its parent Canadian company (formerly Pacific Asbestos) is now officially Woodsreef Minerals, Ltd. There was an official dedication in April and the mill was approaching full capacity throughout by yearend. This capacity (70,000 tons per year fiber) is felt to be inadequate, and plans for doubling it by 1975 are underway.

Bolivia.—The 3-year United Nations Development Program (UNDP) to assist in establishing an asbestos industry at Cochabamba was terminated in 1972. UNDP called the project a success and thought the operation could function without further assistance.

Canada.—The world's largest producer rebounded from last year's drop in production with a 3% increase in 1972. There were notes of caution from some industry leaders saying that market expansion would proceed at a slower rate and that new markets and applications were essential to a healthy industry. These probably well-founded views, however, were offset by the scurry of activity at producing mines and at those with potentials. This activity hints at a more optimistic viewpoint. Examples of this are—

1. The expansion and modernization of the Canadian Johns-Manville Co., Ltd., mine and mill at Asbestos, Quebec, has not been curtailed. The project neared completion at yearend, and among the new facilities was the world's largest crusher. This 800-ton gyratory crusher can accept the full load of a 200-ton dump truck at one time.

2. The Asbestos Corp's new mine on the Ungava Peninsula went into production and started shipping concentrate to Nordenheim, West Germany. Of real significance is the news that the tailings from

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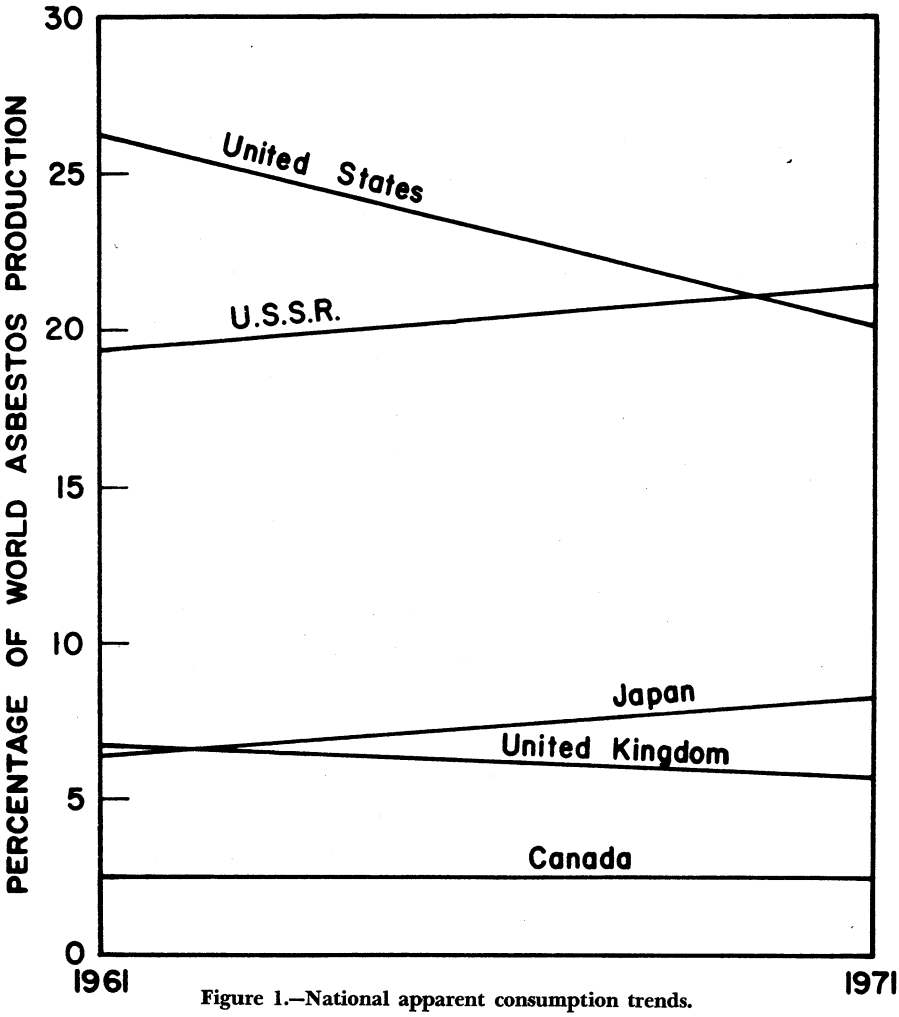


Figure 1.—National apparent consumption trends.

the Nordenheim plant are being used to make a marketable nonfired brick of good quality.

3. Abitibi Asbestos Mining Co., Ltd., has sold an 18% interest in its Amos, Quebec, deposit to Brinco, Ltd., which has an option on a further 33%. The $2 million advanced by Brinco is being used to provide a 35-ton-per-day mill for pilot studies.

4. Pan Ocean Oil Corp. is negotiating with Pathfinder Resources Ltd. over the possible development of an asbestos ore body in Cleveland Township, Quebec.

5. Allied Mining Corp. is planning a merger with United Asbestos Corp. to further the production plans for their Midlothian Township, Ontario, asbestos deposit.

New Zealand.—Kennecott Exploration Ltd., the New Zealand subsidiary of the U.S. company, has reportedly discovered a large asbestos property at Red Hills in West Otago on South Island.

Rhodesia Southern.—Undaunted by strikes early in the year, the Rhodesian and General Asbestos Corp. spent 25 million rand replacing the mill at their King mine. The first asbestos in several years was shipped to the United States.

Sudan.—A United Nations Development

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Program survey of an asbestos deposit in the Ingenassa Hills has not yet been made public.

Swaziland.—The Government reached a new agreement with Turner & Newell Ltd. in which a 20% interest in the Havelock asbestos mine would be transferred to the Government immediately without cost and another 20% would be bought from profits over 6 years.

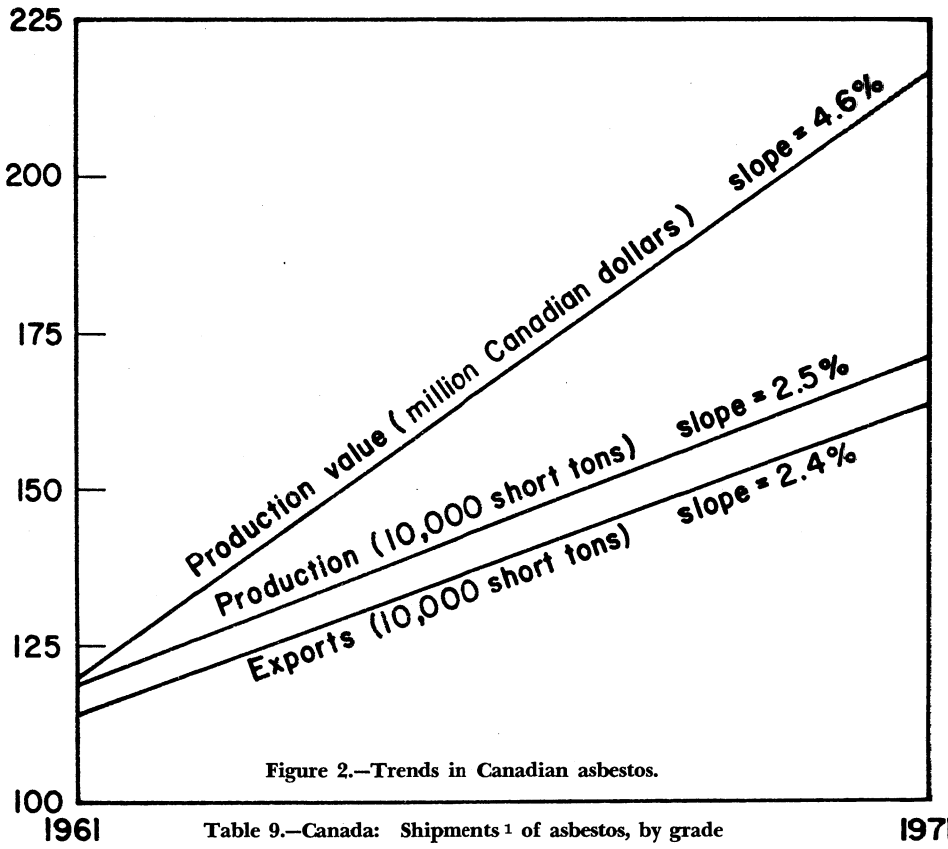


Figure 2.—Trends in Canadian asbestos.

Table 9.—Canada: Shipments[1] of asbestos, by grade

(Short tons)

	1968	1969	1970	1971	1972
Quebec milled group:					
BM I	32,248	29,291	24,648	21,272	21,538
BM II	529,253	530,354	563,647	519,621	508,970
BM III	800,809	783,562	779,229	801,427	847,289
Newfoundland, Ontario, British Columbia, and Yukon	147,389	233,669	294,120	292,342	309,822
Total	1,509,699	1,576,876	1,661,644	1,634,662	1,687,619

[1] Includes tonnage for own use.

Source: Dominion Bureau of Statistics.

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Table 10.—Asbestos: World production, by country

(Short tons)

Country [1]	1970	1971	1972 [p]
North America:			
Canada (sales)	1,661,644	1,634,579	1,629,000
United States (sold or used by producers)	125,314	130,882	131,663
Latin America:			
Argentina	39	433	[e] 440
Brazil [e]	18,000	22,000	36,000
Europe:			
Bulgaria	3,307	[e] 3,300	[e] 3,300
Finland [2]	15,019	11,420	7,042
France [e]	550	550	550
Italy	130,663	131,801	145,675
Portugal	223	140	[3] 9
U.S.S.R. [e]	1,175,000	1,270,000	1,345,000
Yugoslavia	13,342	17,011	12,170
Africa:			
Egypt, Arab Republic of	[4] 495	77	[e] 80
Mozambique	251	1,577	589
Rhodesia, Southern [e]	88,000	88,000	88,000
South Africa, Republic of	[r] 320,020	355,228	356,206
Swaziland	36,439	39,114	36,817
Asia:			
China, People's Republic of [e]	190,000	175,000	220,000
Cyprus	28,247	30,531	[5] 30,851
India	10,840	12,122	13,528
Japan	23,451	19,762	15,903
Korea, Republic of (South)	1,513	--	2,155
Philippines	1,337	--	--
Taiwan	3,133	2,565	2,962
Turkey	[r] 3,609	4,291	[e] 4,400
Oceania: Australia	[r] 815	990	[e] 1,000
Total	[r] 3,851,251	3,951,373	4,083,340

[e] Estimate. [p] Preliminary. [r] Revised.

[1] In addition to the countries listed Czechoslovakia, North Korea and Romania also produce asbestos, but available information is inadequate to make reliable estimates of output levels.

[2] Includes asbestos flour.

[3] Gross weight.

[4] Includes vermiculite.

[5] Exports only.

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