Asbestos

By Robert A. Clifton [1]

Shipments of asbestos in the United States increased 14% and established another record high in 1973. The construction boom was the main reason for the increased demand. Imports were 8% above 1972 levels.

Canada, the world's leading producer of asbestos increased shipments 7% to its largest market, the United States. Canada's total shipments increased 10% over those of 1972.

Legislation and Government Programs.—The Environmental Protection Agency (EPA) published asbestos emission standards in April. In October, EPA published the first portion of its effluent guidelines for asbestos manufacturing point sources. On April 16, 1973, in a Presidential message to the Congress proposing stockpile disposal legislation, the national stockpile objective for amosite was reduced to zero, and that of chrysotile to 1,100 short tons. In1973 the General Services Administration (GSA) reduced Government inventories by disposing of 419 short tons of amosite, 6,076 tons of crocidolite, and 266 tons of chrysotile. Rhodesian asbestos continued to arrive in the country under the "strategic material" exception in the U.S. observance of the United Nations sanctions.

Environmental Impact.—Threatened effects of environmental regulations on the asbestos market remained just threats in 1973. The new regulations of the Office of Safety and Health Administration (OSHA) of the Department of Labor did not slow asbestos use in manufacturing. EPA promulgated its regulations on asbestos dust on April 6.

The controversial Reserve Mining Co. case was still before the U.S. District Court in Duluth, Minn., at year-end. Appellate action was deemed likely whichever side won.

Energy.—The Bureau of Mines conducted a comprehensive study of energy use in the asbestos mining industry in 1973. The survey covered all producers in Arizona, California, North Carolina, and Vermont.

Sources of energy included 2.2 million gallons of heavy fuel oil (43% of total usage), 168 million cubic feet of natural gas (22%), 47.6 million kilowatt-hours of purchased electricity (21%), 545,000 gallons of diesel oil (10%), 182,000 gallons of liquefied petroleum gas (LPG) (3%) and 64,000 gallons of gasoline (1%). Converted

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Table 1.—Salient asbestos statistics

	1969	1970	1971	1972	1973
United States:					
Production (sales)—short tons	125,936	125,314	130,882	131,663	150,036
Value—thousands	$10,648	$10,696	$12,174	$13,409	$16,288
Exports and reexports (unmanufactured)—short tons	36,173	46,585	53,678	58,624	66,442
Value—thousands	$4,979	$6,996	$7,863	$9,051	$9,342
Exports and reexports of asbestos products (value)—thousands	$28,183	$25,391	r $31,409	$32,110	$40,720
Imports for consumption (unmanufactured)—short tons	694,558	649,402	681,367	735,515	792,473
Value—thousands	$76,422	$75,146	$80,090	$87,732	$98,914
Consumption, apparent [1] short tons	784,321	728,131	758,571	808,554	876,067
World: Production—do	3,599,123	3,851,251	r 3,951,449	4,159,984	4,605,935

r Revised.
[1] Measured by quantity produced, plus imports (unmanufactured) minus exports and reexports (unmanufactured).

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to equivalent kilowatt-hours, total energy used was 226 million kilowatt hours, of which 59 million (26%) was used in mining and 167 million (74%) in milling. On a tonnage basis, energy used per ton of usable asbestos was 1,500 kilowatt-hours. Estimated cost was $1.7 million or $11.32 per ton.

Table 2.—Analysis of U.S. asbestos production and trade

(As a percent of apparent consumption)

	1969	1970	1971	1972	1973
Mine production:					
Quantity	16	17	17	16	17
Value	13	14	14	14	15
Exports and reexports (unmanufactured):					
Quantity	5	6	7	7	8
Value	6	9	10	10	8
Imports for consumption:					
Quantity	89	89	90	91	90
Value	93	95	95	96	93
Net imports:					
Quantity	84	83	83	84	83
Value	87	86	86	86	85

Table 3.—Stockpile objective and Government inventories as of December 31, 1973

(Short tons)

	Stockpile objective	Inventories			
		National	Supplemental	Defense Production Act	Total
Amosite	--	11,630	46,549	--	58,179
Chrysotile	1,100	6,059	3,284	--	9,343
Subspecification	--	12	1,274	242	1,528
Crocidolite	--	1,554	17,814	--	19,368

Table 4.—Energy used by the asbestos mining industry in 1973

Source and unit	Used in mining	Used in milling	Total used	Total (thousand kilowatt-hours)
Heavy fuel oil—thousand gallons	852	1,345	2,197	96,358
Natural gas—million cubic feet	--	168	168	50,736
Electricity—thousand kilowatt-hours	2,641	44,974	47,615	47,615
Diesel oil—thousand gallons	412	133	545	22,147
LPG—do	14	168	182	6,987
Gasoline—do	52	12	64	2,343
Total energy, thousand kilowatt-hours	59,192	166,994	226,186	226,186

DOMESTIC PRODUCTION

U.S. mines shipped 14% more asbestos in 1973 than in 1972. The value increased 21%. Four States produced asbestos; California, with 70% was the leader, followed in order by Vermont, Arizona, and North Carolina. Total output was 150,036 tons valued at $16,288,000.

The California segment of the asbestos industry continued to grow, with a 16% increase in production to 105,663 tons, and was led by Pacific Asbestos Corp.'s mine in Calaveras County. The next leading producing county was Fresno, with 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 a $2,213,000 increase in value.

GAF Corp.'s mine in Orleans County, Vt., remained the asbestos mine in the

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United States with the highest production, but was surpassed by Pacific Asbestos in product value. With only Jaquays Mining Corp.'s mine in Gila County operating in 1973, Arizona production decreased 27%. The production in North Carolina of Powhatan Mining Co. declined another 64% in 1973. 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.
Vermont: GAF Corp	Orleans	Lowell	Chrysotile.

CONSUMPTION AND USES

Overall consumption in 1973 increased 8% over that of 1972 with no usage trends apparent.

The data shown in table 6 although collected on the same form as the 1972 data, are not really comparable with 1972 data because expansion of the mailing list resulted in a 17% increase in the share of apparent consumption reported by respondents. It appears however, for example, that the large increase in consumption shown by floor tile manufacturers was the result of better coverage rather than any great change in the market. The cooperation of the industry continued to result in more complete data. The chrysotile data in table 6 have been adjusted to reflect 96% of the apparent consumption. Data for other types of asbestos are presented as reported.

While continuity between 1972 data and those of 1973 is disclaimed in the preceding paragraph, the increase in consumption for minor or "Other" uses (to 22% of the total) is logical and can be explained as reflecting data from new respondents who have minor end uses. Of total consumption, the eight major uses were: Construction 30%, floor tile 20%, paper 10%, friction products 8%, asphalt felts 5%, packing and gaskets 2%, insulation 2%, and textiles 1%.

Analysis of the newly available data on U.S. asbestos consumption was facilitated by selectively grouping commercial chrysotile grades as shown in table 5. These selected groupings disregarded chemical and physical properties, etc., and are based loosely on the Quebec Asbestos Mining Association standards.

Crudes, and Groups 1, 2, and others, while not milled, have the same ultimate textile uses as Group 3, and will be grouped as "BM I," (spinning). Groups 4 and 5 will be "BM II," shingle and paper. Groups 6 and 7 will be "BM III," shorts.

Note that the spinning grades (BM I) are consumed only in four of the major

Table 5.—Bureau of Mines groupings of commercial chrysotile grades

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		
None	Grade 4, Grade 5	Grade 6, Grade 7
VERMONT		
Grade 3	Grade 4, Grade 5	Grade 6, Grade 7, Grade 8

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end uses, and comprised 2% of the reported tonnage consumed. Shingle and paper grades (BM II) comprised 20% of the weight of the fibers reported and were consumed in all the major use categories but floor tile and textiles. The remainder, 78% of the reported fibers were shorts (BM III) and were consumed in every major use except textiles.

The construction field accounted for 17% of the anthophyllite reported consumed with minor uses the remainder.

Eighty-four percent of the reported amosite consumption was used for insulation, 6% for construction, and 7% for asphalt felts.

Construction accounted for 50% of the crocidolite consumed and paper 1%.

A market survey made by a major inorganic fiber manufacturer, covering 1972 sales, distinguished between product categories and major consuming industry usage. This distinction between products and end uses was adhered to in this chapter.

Analysis of table 7 shows that although 100% of the obvious products were used in the construction industry, there were enough portions of other products used to show the construction industry accounting for 77% of the total asbestos consumption. This is probably high and caused in part by assigning all asbestos consumption to only three major industries. Another possible source of error can come from assigning no insulation (thermal or electrical) consumption to the transportation industry, because shipboard, train, and truck uses for insulation products are many.

The major industry breakdown of gaskets and packing, friction materials, coatings and compounds, and plastics are of interest.

An EPA report shows that nine of the major asbestos products manufacturing firms have captive fiber sources through United States and Canadian mines either wholly or partially owned. The total present production capacity of these mines exceeds 2 million short tons per year.

Table 6.—U.S. asbestos consumption in 1973

(Short tons)

End uses	Chrysotile (adjusted)				Antho-phyllite (reported)	Amosite (reported)	Croci-dolite (reported)
	BM I	BM II	BM III	Total			
Construction	--	99,900	148,400	248,300	193	275	9,029
Floor tile	--	--	172,700	172,700	--	--	--
Friction products	5,600	28,100	35,000	68,700	--	--	--
Paper	--	3,300	85,200	88,500	--	3	218
Asphalt felts	--	8,600	36,300	44,900	--	310	--
Packing and gaskets	1,200	10,700	9,600	21,500	--	--	56
Insulation	1,200	2,400	8,200	11,800	--	3,587	--
Textiles	10,900	--	--	10,900	--	--	29
Other	400	16,000	155,500	171,900	969	98	8,634
Total	19,300	169,000	650,900	839,200	1,162	4,273	17,966

Table 7.—Asbestos product industry distribution in 1972

(Thousand short tons)

Product	Market industry				
	Con-struction	Trans-portation	Appliance and equipment	Total	Percent of total
Asbestos cement pipe and sheet	217	--	--	217	26.8
Vinyl asbestos floor tile	152	--	--	152	18.7
Sheet vinyl flooring	96	--	--	96	11.8
Roofing papers	82	--	--	82	10.1
Gaskets and packing	10	25	35	70	8.6
Friction materials	--	60	8	68	8.4
Insulation, pipe and thermal	40	--	10	50	6.2
Coatings and compounds	23	5	5	33	4.1
Plastics	4	11	8	23	2.8
Electrical insulation	--	--	10	10	1.2
Export and reexport	--	4	4	8	1.0
Miscellaneous	--	1	1	2	.3
Total	624	106	81	811	100.0
Percent of total	77	13	10	100	

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PRICES

Quoted prices for Quebec asbestos in 1973 rose 8%, effective May 1, 1973. British Columbia and Vermont asbestos prices remained unchanged. The price of all asbestos was expected to rise in the future.

Prices for some grades of Arizona chrysotile asbestos were raised on September 1, 1973. Quotations, f.o.b. Globe, were as follows:

Grade	Description	Per short ton
Group No. 1	Crude	$1,650
Group No. 2	do	950
AAA	do	853
Group No. 3	Nonferrous filtering and spinning	550– 700
Group No. 4	Nonferrous plastic and filtering	550– 600
Group No. 5	Plastic and filtering	385– 425
Group No. 6	Refuse or shorts	350
Group No. 7	do	65– 100

As of February 15, 1973, Vermont chrysotile asbestos, f.o.b. Morrisville, was priced as follows:

Grade	Description	Per short ton
Group No. 4	Shingle fiber	$218.00–371.00
Group No. 5	Paper fiber	157.50–185.00
Group No. 6	Waste, stucco, or plaster fiber	114.00
Group No. 7	Shorts and floats	43.50– 95.00

Quotations for Canadian (Quebec) chrysotile, f.o.b. mine, were as follows, as of May 1, 1973:

Grade	Description	Per short ton
Group No. 1	Crude	Can $1,745
Group No. 2	do	945
Group No. 3	Spinning fiber	445–730
Group No. 4	Shingle fiber	240–414
Group No. 5	Paper fiber	177–209
Group No. 6	Waste, stucco, or plaster	129
Group No. 7	Refuse or shorts	54–105

Prices for British Columbia, Canada, chrysotile asbestos were effective January 1, 1973. Quotations, f.o.b. Vancouver, were as follows:

Grade	Description	Per short ton
AAA	Nonferrous-spinning fiber	Can $895
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

Private negotiated sales are the African asbestos producers' modus operandi. Because this rules out market quotations, the following are average values, regardless of grade, imported from Republic of South Africa calculated from U.S. Department of Commerce data:

Type	Per short ton				
	1969	1970	1971	1972	1973[1]
Amosite	$153	$160	$164	$187	$187
Crocidolite	189	196	212	211	210
Chrysotile	192	198	120	202	260

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

The increased demand for asbestos in all categories resulted in price increases almost across the board. Further price rises are expected early in 1974.[2]

[2] Asbestos. V. 55, No. 7, January 1974, p. 40.

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FOREIGN TRADE

The value of exports of asbestos products manufactured in the United States increased 27% over the value of those exported in 1972. Six of the nearly 100 countries buying these products accounted for more than 60% of the foreign sales. They were Canada (40%), West Germany (8%), the United Kingdom (7%), Mexico (3%), Australia (3%), and Venezuela (1%).

The major products exported were packing and gaskets with 26% of the value, brake linings with 19%, and textiles and yarns 16%.

In 1973 the United States imported 90% of its crude asbestos needs. This was 1% below the 1972 percentage. Canada provided 96% of the imports, the Republic of South Africa provided 3%, and 13 other countries provided the remainder. Chrysotile, with 97%, dominated the imported types. There was a 13% increase in the dollar value of imported fibers.

Table 8.—U.S. exports and reexports of asbestos and asbestos products

Product	1972		1973	
	Quantity	Value (thousands)	Quantity	Value (thousands)
EXPORTS				
Unmanufactured:				
Crude and spinning and nonspinning fibers				
short tons	22,081	$3,786	42,791	$6,604
Waste and refuse do	29,711	3,835	23,109	2,647
Total do	51,792	7,621	65,900	9,251
Products:				
Gaskets and packing do	2,409	7,462	3,309	10,483
Brake linings do	4,496	6,654	5,813	7,863
Clutch facings, including linings number	2,727,573	1,908	2,620,486	1,870
Textiles and yarn short tons	8,643	4,863	9,598	6,454
Shingles and clapboard do	10,366	2,308	11,226	2,586
Articles of asbestos cement do	9,649	2,148	9,336	2,478
Protective clothing	NA	320	NA	462
Insulation, heat and sound	NA	1,772	NA	2,850
Manufactures, n.e.c.	NA	r 4,623	NA	5,659
Total	--	32,058	--	40,705
REEXPORTS				
Unmanufactured:				
Crude and spinning and nonspinning fibers				
short tons	6,287	1,367	438	86
Waste and refuse do	545	63	104	5
Total do	6,832	1,430	542	91
Products:				
Gaskets and packing do	254	11		
Textiles and yarn do	5	12	--	--
Articles of asbestos cement do	100	29	--	--
Total do	359	52	54	15

r Revised. NA Not available.

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Table 9.—U.S. imports for consumption of asbestos (unmanufactured), by class and country

Year and country	Crude (including blue fiber)		Textile fiber		All other		Total	
	Quantity (short tons)	Value (thousands)	Quantity (short tons)	Value (thousands)	Quantity (short tons)	Value (thousands)	Quantity (short tons)	Value (thousands)
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
1973								
Canada	1,991	397	15,665	6,020	746,988	86,449	764,644	92,866
Finland	--	--	--	--	1,027	93	1,027	93
Germany, West	79	21	--	--	--	--	79	21
Guyana	--	--	--	--	303	8	303	8
Italy	--	--	--	--	8	3	8	3
Malagasy, Republic	--	--	--	--	3	1	3	1
Mexico	--	--	--	--	43	7	43	7
Mozambique	51	27	--	--	5	1	56	28
Panama	--	--	--	--	12	11	12	11
Portugal	--	--	--	--	1	(1)	1	(1)
Rhodesia, Southern	845	423	--	--	--	--	845	423
South Africa, Republic of	21,629	4,510	8	1	3,427	733	25,064	5,244
Swaziland	200	122	130	73	--	--	330	195
Yemen	--	--	--	--	50	11	50	11
Yugoslavia	--	--	--	--	8	3	8	3
Total	24,795	5,500	15,803	6,094	751,875	87,320	792,473	98,914

[1] Less than ½ unit.

Table 10.—U.S. imports for consumption of asbestos from specified countries, by grade

(Short tons)

Grade	1972			1973		
	Canada	Southern Rhodesia	Republic of South Africa	Canada	Southern Rhodesia	Republic of South Africa
Chrysotile:						
Crudes	66	200	2,439	1,991	845	1,235
Spinning fibers	11,599	--	16	15,665	--	8
All other	702,230	--	1,431	746,988	--	3,427
Crocidolite (blue)	--	--	5,374	--	--	12,552
Amosite	--	--	7,125	--	--	7,842
Total	713,895	200	16,385	764,644	845	25,064

WORLD REVIEW

All available information leads to the conclusion that 1973 was a record setting year for asbestos throughout the world. Demand, at least in the Non-Communist countries outstripped supply, as evidenced by the world's largest mine having its entire year's production sold by August. Market growth was limited by supply, but no real hardships surfaced, with the exception of spinning-grade fibers, which were in very short supply the latter part of the year.

The market situation, and worldwide inflation would indicate substantial price increases in 1974.

Australia.—The Woodsreef mine ran into trouble on two fronts. The revalua-

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tion of the Australian dollar decreased revenue at a time when equipment inadequacies would not permit increased production. New equipment eased the situation somewhat, but maybe not enough to reach the break-even point by the end of the year.

Bolivia.—A further influx ($658,000) of money was earmarked by the United Nations Industrial Development Organization (UNIDO) to the budding asbestos industry at Cochabamba. Corporacion Boliviana de Fomento was to contribute an additional $328,000 toward achieving a 5,000-ton-per-year operation there.

Canada.—For the second straight year Canadian production reached a record high, with a 17% increase over the previous year, and remains firmly in the lead as the worlds primary producer. A controversial proposal was put forward in Quebec to have the province's asbestos (80% of Canadian total) marketed through a provincial government "Development Council." The mining community reacted unfavorably. Major activity centered around the following:

1. Canadian Johns-Manville Co., Ltd. officially dedicated the new concentrator plant at its Jeffrey mine in Asbestos, Quebec. This marks the end of its $75 million expansion program. The mine, probably the world's largest, now produces 600,000 tons per year of fiber, which represents 37% of Canada's output and 13% of world chrysotile production.

2. United Asbestos, Inc., the name of the company resulting from the merger of United Asbestos Corp., Ltd., and Allied Mining Corp., reported that its property in Midlothian Township, Ontario, contains 31 million tons of 9% fiber ore in grades 5, 6, and 7. Production of 100,000 tons per year of fiber is planned to start in 1974 after a very successful test marketing effort.

3. Abitibi Asbestos Mining Co., Ltd., reported proven ore reserves of 100 million tons of ore averaging 4% fiber at its property 50 miles north of Amos, Quebec. Bulk tests have been run through its pilot plant, and fibers are being amassed for test marketing.

4. Rio Tinto Canadian Exploration, Ltd., was evaluating the McAdam Mining Corp., Ltd., property under its option. The property, 20 miles east of Chibougamau, Quebue, has a "C" zone containing 105 million tons of ore grading 3.92% fiber and three other zones containing 86.4 million tons of 3.55% ore.

5. Lake Asbestos of Quebec, Ltd., a subsidiary of American Smelting and Refining Co., has purchased the assets of National Gypsum Co.'s Canadian subsidiary National Asbestos Mines, Ltd., at Thetford Mines. The combined production will put Lake Asbestos at nearly 200,000 tons per year of fiber.

Colombia.—Asbestos Colombianas, S.A. and Nicolet Industries, Inc. is raising its sights from 25,000 tons per year to 60,000 tons per year of fiber from its find in the Department of Antioquia. Reserves are estimated at 18.2 million tons of 4.3% fiber content.

Greece.—The emergence of a healthy and growing asbestos cement products industry has stabilized the "on again, off again" picture of the Kozani deposit. The Asbestos Mines of Northern Greece Mining, S.A. (MABEM), which is 90% owned by Cerro Corp., has finished exploration and pilot plant studies. A plant with 50,000 tons per year (expandable to 1,000,000) will be started in 1974 to process the 50 million tons of ore containing 3% chrysotile of grades 4, 5, and 6.

New Zealand.—Cassiar Asbestos Corp., Ltd., was selected by Kennecott Copper Corp. and Lime and Marble Corp. as a partner to explore and, if warranted, develop the Pyke asbestos find. Exploration and bulk sampling were underway.

Philippines.—La Suerta Resources and Industries, Inc., was actively developing an asbestos prospect in Zambales and negotiating for a Japanese market.

Spain.—Active prospecting for asbestos was underway in the Sierra Nevada where short fibers were once produced.

Swaziland.—The Havelock mine, now owned by Havelock Asbestos Mines, Ltd., in which the Swaziland Government owns a 40% share, with Turner & Newall owning the rest, was having difficulties with weak rock underground. Yield and profits have been suffering.

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U.S.S.R.—Comecon members are to construct an asbestos mining and concentration plant at Kiembay in Kazakhstan, according to "Novosti." The 500,000 tons per year of asbestos will be proportioned to members based on their contribution to construction costs. Ore reserves are a reported 24 million tons.

Table 11.—Asbestos: World production by country

(Short tons)

Country [1]	1971	1972	1973 [p]
North America:			
Canada (sales)	1,634,579	1,687,051	1,974,000
Mexico	--	--	17
United States (sold or used by producers)	130,882	131,663	150,036
South America:			
Argentina	433	1,001	[e] 1,100
Brazil [e]	22,000	36,000	44,000
Europe:			
Bulgaria	[e] 3,300	1,653	[e] 3,300
Finland [2]	11,420	7,042	[e] 12,000
France	783	[r e] 780	[e] 780
Italy	131,801	145,675	164,525
Portugal	140	[3] 9	[e] 140
U.S.S.R. [e]	1,270,000	1,345,000	1,411,000
Yugoslavia	17,011	12,170	10,352
Africa:			
Egypt, Arab Republic of	77	486	486
Mozambique	1,577	589	624
Rhodesia, Southern [e]	88,000	88,000	88,000
South Africa, Republic of	355,228	356,206	368,435
Swaziland	39,114	36,817	40,675
Asia:			
China, People's Republic of [e]	175,000	220,000	230,000
Cyprus	30,531	[4] 30,851	29,059
India	12,122	13,528	12,456
Japan	19,762	15,903	15,281
Korea, Republic of (South)	--	2,155	6,268
Taiwan	2,565	2,962	[e] 3,200
Turkey	4,291	5,428	5,201
Oceania:			
Australia	[r] 833	19,015	[e] 35,000
Total	[r] 3,951,449	4,159,984	4,605,935

[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] Exports only.

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