

Mica

By Stanley K. Haines¹

Sheet mica production was limited to a small quantity of hand-picked low-quality muscovite from North Carolina. Domestic scrap and flake mica production increased 25% and sales of ground mica increased 23% in 1977.

Fabrication of block and film mica declined for the fourth consecutive year to 448,000 pounds, a 16% decrease. Consumption of mica splittings dropped 18% to the lowest level since 1939. Exports of all forms of mica increased 13% in quantity but decreased

6% in value. Imports of all forms of mica declined, led by a decline of 44% in imports of waste and scrap mica.

Legislation and Government Programs.—Sales of excess sheet mica by the General Service Administration (GSA) amounted to 630,000 pounds. The sale of 62,181 pounds of muscovite film depleted the current quantity authorized for disposal. Muscovite and phlogopite block sales remained frozen.

Table 1.—Salient mica statistics

	1973	1974	1975	1976	1977
United States:					
Production (sold or used by producing companies):					
Sheet mica ----- thousand pounds ..	30	20	5	5	1
Value ----- thousands ..	\$15	\$10	\$3	\$3	(¹)
Scrap and flake mica ----- thousand short tons ..	153	137	135	¹ 141	176
Value ----- thousands ..	\$6,082	\$5,475	\$5,219	¹ \$5,765	\$6,480
Ground mica ----- thousand short tons ..	137	117	115	¹ 133	163
Value ----- thousands ..	\$9,464	\$10,171	\$9,381	¹ \$10,305	\$12,196
Consumption:					
Block and film ----- thousand pounds ..	1,265	974	623	534	448
Value ----- thousands ..	\$2,106	\$2,015	\$1,608	\$1,413	\$990
Splittings ----- thousand pounds ..	5,178	6,186	4,746	5,025	4,144
Value ----- thousands ..	\$1,715	\$2,801	\$2,634	\$3,226	\$2,718
Exports ----- thousand short tons ..	8	9	6	8	10
Imports ----- do. ..	6	7	8	5	4
World production ----- thousand pounds ..	525,709	515,916	¹ 491,872	¹ 494,596	587,437

¹Revised.

¹Less than 1/2 unit.

Table 2.—Defense Materials Inventory for sheet mica as of December 31, 1977

(Pounds)

Category	Stockpile goal	Total inventory	Total excess	Balance of disposal authorization	Sold in 1977
Muscovite block, Stained or better -----	6,188,000	5,108,133	---	---	---
Muscovite film, 1st and 2d qualities -----	90,000	1,267,779	1,177,779	---	62,181
Muscovite splittings -----	12,631,000	22,111,961	9,480,961	3,052,086	430,380
Phlogopite block -----	206,064	127,773	---	---	---
Phlogopite splittings -----	932,000	2,911,301	1,979,301	1,611,301	136,652

Table 3.—Mica sold or used by producers in the United States

Year and State	Sheet mica							
	Uncut punch and circle mica		Uncut mica larger than punch and circle		Total sheet mica		Scrap and flake mica ¹	
	Pounds	Value	Pounds	Value	Pounds	Value	Short tons	Value
1973 -----	--	--	30,000	\$15,000	30,000	\$15,000	153,327	\$6,081,898
1974 -----	--	--	20,000	\$10,000	\$20,000	\$10,000	136,966	5,474,636
1975 -----	--	--	\$5,000	\$2,500	\$5,000	\$2,500	134,582	5,219,461
1976 -----	--	--	\$5,000	\$2,500	\$5,000	\$2,500	¹ 140,712	⁵ 5,764,809
1977:								
North Carolina -----	--	--	\$1,000	°(°)	\$1,000	°(°)	91,379	4,207,049
South Carolina -----	--	--	--	--	--	--	42,747	588,998
Other States ² -----	--	--	--	--	--	--	41,753	1,684,147
Total -----	--	--	\$1,000	°(°)	\$1,000	°(°)	175,879	6,480,189

°Estimate. ¹Revised.

¹Includes finely divided mica recovered from mica and sericite schist, and mica that is a byproduct of feldspar and kaolin beneficiation.

²Less than 1/2 unit.

³Includes Alabama, Arizona, Connecticut, Georgia, New Mexico, Pennsylvania, and South Dakota.

Table 4.—Ground mica sold or used by producers in the United States, by method of grinding¹

Year	Dry-ground		Wet-ground		Total ²	
	Short tons	Value (thousands)	Short tons	Value (thousands)	Short tons	Value (thousands)
1973 -----	120,762	\$6,469	15,739	\$2,995	136,501	\$9,464
1974 -----	101,455	6,335	15,908	3,836	117,363	10,171
1975 -----	104,157	6,551	11,244	2,829	115,401	9,381
1976 -----	¹ 119,755	⁷ 7,198	13,197	3,107	¹ 132,952	¹ 10,305
1977 -----	148,786	8,524	14,601	3,673	163,387	12,196

¹Revised.

²Domestic and some imported scrap.

³Data may not add to totals shown because of independent rounding.

DOMESTIC PRODUCTION

Sheet Mica.—An estimated 1,000 pounds of low-quality and low-grade sheet muscovite was produced and sold locally in the Spruce Pine, N.C., area. The mica, which was hand-picked from occasional pockets uncovered during feldspar mining operations, was not mined as the primary product.

Scrap and Flake Mica.—North Carolina continued to lead the Nation with a total production of 91,400 tons of scrap and flake mica. This was 52% of the total U.S. production of 176,000 tons valued at \$6.48 million. The 25% increase in total domestic production was attributed to the economic recovery of the construction industry. The remaining production came from Alabama, Arizona, Connecticut, Georgia, New Mexico, Pennsylvania, South Carolina, and South

Dakota. Over 41% of the production was sericite (fine-grained muscovite mica). The remaining quantity was obtained by flotation of kaolin, feldspar, and mica ores.

INDUSMIN, a subsidiary of Falconbridge Nickel Mines, Ltd. purchased all shares of Lawson United Feldspar and Mineral Co., Inc., of Spruce Pine, N.C. Lawson United was a producer of scrap mica by flotation of pegmatite ore.

Leading producers of scrap and flake mica were Harris Mining Co., Spruce Pine, N.C.; Boren Clay Products, Gaffney, S.C.; Kings Mountain Mica Co., Inc., Kings Mountain, N.C.; Mineral Industrial Commodities of America, Inc., Santa Fe, N. Mex.; and Piedmont Minerals Co., Inc., Greensboro, N.C.

Ground Mica.—Sales of ground mica in-

creased 23% in quantity and 18% in value over the revised 1976 totals. Dry-ground mica was 91% of the total and wet-ground mica constituted the remaining 9%. Both wet- and dry-ground mica increased in quantity and value. Twenty-one companies operated 22 plants for ground scrap and flake mica (including sericite). Eighteen of these plants produced dry-ground mica, 3

produced wet-ground mica, and 1 produced both wet- and dry-ground mica.

Leading producers were Boren Clay Products, Gaffney, S.C.; Harris Mining Co., Spruce Pine, N.C.; Deneen Mica Co., Inc., Micaville, N.C.; Mineral Industrial Commodities of America, Inc., Santa Fe, N. Mex.; and United States Gypsum Co., Chicago, Ill.

CONSUMPTION AND USES

Sheet Mica.—Consumption of block and film mica decreased for the fourth consecutive year. Fabrication of block and film mica (muscovite and phlogopite) declined 16% to 448,000 pounds. Of this total, 92% was muscovite block, 6% was phlogopite (magnesium mica) block, and 2% was muscovite film.

Vacuum tubes required 58% of the total muscovite block fabricated. The remaining fabricated block was used in gage glass and diaphragms (3%), and in capacitors and other uses (39%). Stained-quality muscovite block was in greatest demand and accounted for 58% of consumption; Lower than Stained, 40%; and Good Stained or better, 2%. Consumption of No. 6 grade was 42% of total fabrication of muscovite block, followed by smaller than No. 6, 18%; No. 5, 15%; No. 5 1/2, 13%; and No. 4 and larger, 12%.

Muscovite film fabrications decreased over 9% to 9,316 pounds in 1977. First-quality film was 54% of the total consumed, followed by second quality, 29%, and other quality, 17%. The film was consumed primarily in producing mica capacitors.

Muscovite block and film was consumed by nine companies in seven States. There were two consuming plants each in North Carolina and New Jersey, and one in Massachusetts, New York, Ohio, Pennsylvania, and Virginia.

Phlogopite block fabrication declined 40% from 43,865 pounds in 1976 to 26,143 pounds in 1977. The decrease was caused in part by the cost and difficulty of obtaining supplies of the raw mica. Phlogopite was consumed by seven companies in five States.

Consumption of mica splittings reached a 39-year low in 1977 by decreasing 18% in quantity. Phlogopite splittings consumption increased 35%, but this was not nearly enough to offset the 19% decline for muscovite splittings. Inventory adjustments of

finished products made necessary by a declining market for the built-up mica caused the decline. Muscovite splittings, mainly from India, represented 96% of the total consumption. The remaining 4% was phlogopite splittings from Madagascar. Splittings were fabricated into various built-up mica products by 10 companies operating 11 plants in 8 States.

Built-up Mica.—This mica-base product was made by mechanical or hand setting of overlapping splittings and alternate layers of binders and splittings. The primary use was as electrical insulating material. Molding plate, segment plate, heater plate, and tape all registered declines in production. Segment plate retained the lead in production (31%), followed by molding plate (27%) and tape (17%).

Reconstituted Mica (Mica Paper).—Six companies consumed 4.99 million pounds of scrap mica to produce 3.46 million pounds of mica paper in 1977. The manufacturing companies were General Electric Co., Schenectady, N.Y.; U.S. Samica Corp., Rutland, Vt.; Kirkwood Acim Paper Co., Hempstead, N.Y.; Essex Group, United Technologies Corp., New Market, N.H.; Corona Films Inc., West Townsend, Mass; and Proctor Silex, Mount Airy, N.C. Proctor Silex began producing mica paper for captive use. The paper was built up into plates that were cut and used in various household appliances, such as toasters.

Ground Mica.—Sales of ground mica increased 23% over the 1976 level of 133,000 tons to 163,400 tons in 1977. The increase was due to the recovery of the construction industry and the output of several sericite operations in South Carolina. The principal end uses were joint cement (35%), brick (20%), paint (15%), and rubber (3%). Ground mica for use in brick was mainly sericite from North and South Carolina. The sericite lightened the color of the brick.

Table 5.—Fabrication of muscovite ruby and nonruby block and film mica and phlogopite block mica, in the United States in 1977, by quality and end-product use

(Pounds)

Variety, form, and quality	Electronic uses				Nonelectronic uses			Grand total
	Capacitors	Tubes	Other	Total	Gage glass and diaphragms	Other	Total	
Muscovite:								
Block:								
Good Stained or better	500	369	3,194	4,063	3,162	1,878	5,040	9,103
Stained	155	173,946	36,111	210,212	1,966	23,378	30,344	240,556
Lower than Stained ¹	--	63,784	53,156	116,940	8,080	37,447	45,527	162,467
Total	655	238,099	92,461	331,215	13,208	67,703	80,911	412,126
Film:								
1st quality	2,372	2,650	--	5,022	--	--	--	5,022
2nd quality	2,744	--	--	2,744	--	--	--	2,744
Other quality	1,550	--	--	1,550	--	--	--	1,550
Total	6,666	2,650	--	9,316	--	--	--	9,316
Block and film:								
Good Stained or better ²	2,372	3,019	3,194	9,085	3,162	1,878	5,040	14,125
Stained ³	2,899	173,946	36,111	212,956	1,966	23,378	30,344	243,300
Lower than Stained	1,550	63,784	53,156	118,490	8,080	37,447	45,527	164,017
Total	7,321	240,749	92,461	340,531	13,208	67,703	80,911	421,442
Phlogopite: Block (all qualities)	--	--	1,328	1,328	--	24,815	24,815	26,143

¹Includes punch mica.²Includes 1st- and 2nd-quality film.³Includes other-quality film.**Table 6.—Fabrication of muscovite ruby and nonruby block and film mica in the United States in 1977, by quality and grade**

(Pounds)

Form, variety, and quality	No. 4 and larger	No. 5	No. 5 1/2	No. 6	Other ¹	Total
Block:						
Ruby:						
Good Stained or better	4,099	1,781	267	844	--	6,991
Stained	10,111	41,701	25,089	130,414	588	207,903
Lower than Stained	4,330	13,944	25,550	38,960	29,074	111,858
Total	18,540	57,426	50,906	170,218	29,662	326,752
Nonruby:						
Good Stained or better	1,952	60	--	100	--	2,112
Stained	24,740	3,864	1,444	2,605	--	32,653
Lower than Stained	3,274	10	--	2,825	44,500	50,609
Total	29,966	3,934	1,444	5,530	44,500	85,374
Film:						
Ruby:						
1st quality	640	807	425	2,250	--	4,122
2nd quality	344	900	900	300	--	2,444
Other quality	--	--	--	--	1,550	1,550
Total	984	1,707	1,325	2,550	1,550	8,116
Nonruby:						
1st quality	--	--	350	550	--	900
2nd quality	--	--	300	--	--	300
Other quality	--	--	--	--	--	--
Total	--	--	650	550	--	1,200

¹Figures for block mica include all smaller than No. 6 grade and punch mica.

Table 7.—Consumption and stocks of mica splittings in the United States, by source
(Thousand pounds and thousand dollars)

	India		Malagasy		Total ¹	
	Quantity	Value	Quantity	Value	Quantity	Value
Consumption:						
1973 -----	5,063	1,606	115	109	5,178	1,715
1974 -----	6,026	2,673	160	128	6,186	2,801
1975 -----	4,625	2,529	120	104	4,746	2,634
1976 -----	4,903	3,084	122	142	5,025	3,226
1977 -----	3,979	2,525	165	193	4,144	2,718
Stocks on Dec. 31:						
1973 -----	1,246	NA	55	NA	1,301	NA
1974 -----	3,170	NA	87	NA	3,257	NA
1975 -----	3,465	NA	44	NA	3,510	NA
1976 -----	3,166	NA	124	NA	3,290	NA
1977 -----	3,130	NA	68	NA	3,198	NA

NA Not available.

¹Data may not add to totals shown because of independent rounding.

Table 8.—Built-up mica¹ sold or used in the United States, by product
(Thousand pounds and thousand dollars)

Product	1976		1977	
	Quantity	Value	Quantity	Value
Molding plate -----	1,381	3,033	1,227	2,751
Segment plate -----	1,620	4,063	1,408	3,787
Heater plate -----	179	256	172	249
Flexible (cold) -----	588	1,612	617	1,804
Tape -----	819	3,344	775	3,414
Other -----	329	1,165	346	1,246
Total² -----	4,915	13,474	4,545	13,251

¹Consists of alternate layers of binder and irregularly arranged and partly overlapped splittings.

²Data may not add to totals shown because of independent rounding.

Table 9.—Ground mica sold or used by producers in the United States, by use

Use	1976		1977	
	Short tons	Value (thousands)	Short tons	Value (thousands)
Roofing -----	5,011	\$219	3,216	\$200
Brick -----	W	W	32,851	59
Rubber -----	4,680	1,010	5,142	1,202
Paint -----	21,224	2,362	25,202	2,703
Joint cement -----	52,799	3,851	56,504	4,481
Other uses ¹ -----	^r 49,238	^r 2,862	40,472	3,552
Total² -----	^r132,952	^r10,305	163,387	12,196

¹Revised.

W Withheld to avoid disclosing individual company confidential data; included with "Other uses."

²Includes mica used for agricultural products, molded electric insulation, annealing, plastics, welding rods, well drilling, textile and decorative coating, wallpaper, and uses indicated by symbol W.

³Data may not add to totals shown because of independent rounding.

STOCKS

Yearend stocks of sheet mica were 3.6 million pounds. Of this total, 89% was quantity was film. (This information was obtained by direct canvass of consumers of splittings, 11% was block, and a small sheet mica).

PRICES

The average value of muscovite sheet in 1977, based on consumption data, follows: Block, \$2.16 per pound; film, \$4.14 per pound; and splittings, \$0.63 per pound. The average values of phlogopite sheet mica were \$2.42 per pound for block, and \$1.17 per pound for splittings.

The average value of scrap and flake mica produced in 1977 was \$36.12 per ton. The decline in average value was the result of the larger percentage of sericite that was included in the 1977 total. The average value for North Carolina scrap and flake, which is predominantly flotation product, was \$46.03 per ton. In South Carolina, the average value was only \$13.78 because the material was all sericite, which is considera-

bly cheaper to mine.

Table 10.—Price of dry- or wet-ground mica in the United States in 1977,¹ per short ton

Dry-ground:		
Joint cement, 100 mesh	-----	\$80 - \$100
Plastic, 100 mesh	-----	80 - 100
Roofing, 20 to 80 mesh	-----	50 - 70
Wet-ground: ²		
Paint or lacquer, 325 mesh	-----	220 - 240
Rubber	-----	220 - 240
Wall paper	-----	240 - 360

¹In bags at works, carlots, unless otherwise noted.

²Freight allowed east of the Mississippi River.

Source: Chemical Marketing Reporter. V. 213, No. 26, Dec. 26, 1977.

FOREIGN TRADE

Exports of all forms of unmanufactured mica increased 26% to 18.2 million pounds in 1977. Canada was again the leading country of destination with 11.3 million pounds, valued at \$674,000, or about 6 cents per pound. This was a 70% increase in quantity and a 35% increase in value. Venezuela was the second leading country with 1.2 million pounds valued at \$176,000, or 15 cents per pound. The overall average value was 20 cents per pound in 1977, compared with 24 cents per pound in 1976 and 29 cents per pound in 1975. The average value indicated that most of the material exported was ground mica.

Twenty percent of the exports were

moved through the Buffalo, N.Y., customs district, 18% went through the Ogdensburg, N.Y., district, and 9% went through the Seattle, Wash., district.

Imports of all classes of mica declined 18% from 9.2 million pounds in 1976 to 7.8 million pounds. Imports of waste and scrap dropped 44% to 2.3 million pounds. Splittings imports rose to 2.1 million pounds, a gain of 25%. India was the leading source country, providing 56% of the total imports; Brazil was second with 23%.

New York City was the leading district of entry for mica (62%), followed by the Boston and Buffalo districts (9% each).

Table 11.—U.S. exports of mica and manufactures of mica in 1977, by country

Destination	Mica, including block, film, splittings, waste, scrap and ground mica		Manufactured	
	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)
Argentina	21,387	\$70	41,687	\$187
Australia	16,081	15	27,805	86
Bahamas	---	---	12,820	15
Bahrain	167	2	1,416	2
Barbados	40,000	3	---	---
Belgium-Luxembourg	4,258	5	---	---
Brazil	155,924	46	44,040	219
Canada	11,293,695	674	410,478	1,464
Chile	22,519	4	1,425	8
Colombia	206,038	42	663	6
Czechoslovakia	---	---	7,657	8
Denmark	---	---	892	2
Dominican Republic	56,000	7	---	---
Ecuador	39,561	7	---	---
Egypt	127,788	21	---	---
El Salvador	222,000	13	---	---
France	661,452	155	3,003	21
Germany, Federal Republic of	680,596	106	---	---
Ghana	40,784	4	9,104	14

Table 11.—U.S. exports of mica and manufactures of mica in 1977, by country
—Continued

Destination	Mica, including block, film, splittings, waste, scrap and ground mica		Manufactured	
	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)
Greece	13,400	\$2	--	--
Guatemala	277,269	31	1,468	\$3
Haiti	3,642	3	1,709	2
Honduras	43,000	4	--	--
Hungary	106,260	351	--	--
Iran	--	--	70,628	61
Ireland	15,400	3	--	--
Italy	792,828	159	40,411	199
Jamaica	8,694	2	17,528	18
Japan	195,714	442	283	2
Korea, Republic of	79,023	37	60	2
Malaysia	29,400	5	--	--
Mexico	374,299	465	73,175	303
Morocco	16,281	3	--	--
Netherlands	42,000	3	1,197	14
Netherlands Antilles	392	2	3,162	6
New Zealand	39,904	8	--	--
Norway	95,008	7	2,294	13
Pakistan	26,400	5	5,234	13
Panama	20,000	1	14,801	21
Peru	137,528	15	29,754	93
Philippines	37,800	9	401	6
Portugal	--	--	2,904	23
Saudi Arabia	128,513	7	231	1
South Africa, Republic of	--	--	45,019	84
Spain	10,449	20	115,274	264
Sweden	--	--	1,025	5
Switzerland	15,969	6	4,369	12
Taiwan	41,545	10	1,150	9
Tanzania	24,719	4	--	--
Thailand	26,400	1	--	--
Trinidad and Tobago	273,420	40	513	3
United Arab Emirates	399,207	89	87	2
United Kingdom	154,314	466	6,320	35
Venezuela	1,153,584	176	7,943	13
Zaire	13,200	3	--	--
Other	18,571	4	5,067	28
Total	18,202,383	3,557	1,012,977	3,267

Table 12.—U.S. exports and imports of mica

(Thousand pounds and thousand dollars)

Year	Exports (all classes)		Imports for consumption					
			Uncut sheet and punch		Scrap		Manufactured	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1975	12,110	7,104	904	696	10,872	356	5,075	2,935
1976	16,930	7,253	1,655	941	4,213	205	3,328	3,193
1977	19,215	6,824	2,179	988	2,348	112	3,267	3,373

Table 13.—U.S. imports for consumption of mica, by kind and country

Year and country	Waste and scrap				Block mica		Other			
	Phlogopite		Other		Quantity (pounds)	Value (thousands)	Muscovite		Other, n.e.c.	
	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)			Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)
1975 -----	--	--	10,672,125	\$356	247,681	\$507	1,084	\$13	655,727	\$176
1976 -----	2,836	\$3	4,209,738	202	347,828	675	3,440	32	1,303,425	234
1977:										
Brazil -----	--	--	485,012	25	264,561	327	811	8	1,041,002	155
Canada -----	2,600	1	246,900	7	--	--	--	--	448,500	15
Germany, Federal Republic of -----	--	--	--	--	--	--	--	--	--	--
India -----	--	--	1,613,767	79	188,476	313	7,400	18	639	2
Japan -----	--	--	--	--	4,300	7	220	1	213,558	125
Madagascar -----	--	--	--	--	6,506	(¹)	--	--	124	(¹)
Sweden -----	--	--	--	--	--	--	293	2	2,866	7
Tanzania -----	--	--	--	--	--	--	--	--	--	--
United Kingdom -----	--	--	--	--	36	6	95	2	--	--
Total ---	2,600	1	2,345,679	111	463,879	653	8,819	31	1,706,689	304
Splittings										
Not cut or stamped not over 0.006 inch in thickness										
Cut or stamped										
Not over 0.006 inch in thickness										
Over 0.006 inch in thickness										
	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)
1975 -----	3,790,511	\$911	3,751	\$8	30,344	\$350	59,096			\$127
1976 -----	1,710,973	561	100	1	74,413	789	107,799			233
1977:										
Canada -----	--	--	3,782	4	--	--	3,249			20
France -----	--	--	175	2	2,436	6	--			--
Haiti -----	--	--	--	--	983	11	80			2
India -----	2,075,091	604	3,500	3	76,285	1,082	73,005			283
Korea, Republic of -----	--	--	--	--	--	18	1			--
Madagascar -----	56,325	46	--	--	--	--	--			--
Malaysia -----	220	1	--	--	--	--	--			--
Mexico -----	341	1	--	--	--	--	181			1
Singapore -----	--	--	--	--	15	(¹)	--			--
Spain -----	--	--	--	--	175	2	355			2
Taiwan -----	3,756	9	--	--	26	1	--			--
United Kingdom -----	5,000	22	--	--	--	--	--			--
Total ---	2,140,733	683	7,457	9	81,525	1,170	76,955			311
Mica plates and built-up mica										
Ground or pulverized										
Articles not especially provided for mica										
	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)	Quantity (pounds)	Value (thousands)
1975 -----	973,638	\$1,255	201,996	\$22	15,310					\$262
1976 -----	848,758	1,276	546,854	48	39,344					285
1977:										
Belgium -----	--	--	--	--	--	--	--			--
Luxembourg -----	495,655	770	--	--	--	--	--			--
Canada -----	8,982	30	254,007	21	2,322					19
France -----	11,118	14	37,478	8	--					--
Germany, Federal Republic of -----	5,708	15	--	--	--					--
India -----	120,855	204	--	--	--		2,503			31
Japan -----	2,367	8	--	--	--		--			--
Mexico -----	--	--	--	--	--		135			8
Netherlands -----	--	--	--	--	--		55			10
Singapore -----	--	--	--	--	--		122			3
Switzerland -----	279	2	--	--	--		--			--
United Kingdom -----	395	2	--	--	--		18,233			55
Total ---	645,359	1,045	291,485	29	23,370					126

¹Less than 1/2 unit.

WORLD REVIEW

World production of all forms of mica decreased 19% to 587.4 million pounds in 1977. India led the world in production of sheet mica. The United States remained the world leader for production of scrap and flake mica.

India.—The Government's Mica Trading Co., Ltd., agreed to supply about \$9 million worth of mica to the U.S.S.R. in 1977.²

U.S.S.R.—Estimated output of mica in

1976 was 47,400 short tons. This was expected to increase to 51,800 tons by 1980. Mamsko Chuysk County of Irkutsk Oblast supplied 75% of the country's production of mica. Nine underground mines operated in 1976.³

¹Physical scientist, Division of Nonmetallic Minerals.

²Engineering and Mining Journal. V. 178, No. 4, April 1977, p. 159.

³Mining Annual Review. U.S.S.R. June 1977, p. 549.

Table 14.—Mica: World production, by country

(Thousand pounds)

Country ¹	1975	1976	1977 ²
Argentina:			
Sheet -----	948	725	} 6,371
Waste, scrap, etc. -----	6,393	5,051	
Brazil ² -----	2,425	6,171	^e 6,200
Colombia ^e -----	90	90	100
Egypt -----	15	^r ^e 110	^e 190
France ^e -----	8,800	8,800	8,800
India:			
Exports:			
Block ³ -----	1,241	^e 1,800	2,423
Splittings ⁴ -----	7,628	^e 8,800	7,873
Scrap ⁵ -----	26,989	^e 33,000	33,076
Domestic consumption, all classes ^e -----	44,000	22,000	33,000
Total ^e -----	79,258	65,600	76,372
Korea, Republic of (sericite) -----	^e 6,600	11,715	22,339
Madagascar (phlogopite):			
Block -----	218	15	} 176
Splittings -----	981	137	
Scrap -----	--	26	
Mexico -----	1,367	2,873	1,700
Mozambique (including scrap) -----	1,984	^e 2,000	^e 2,000
Nepal -----	9	^e 10	^e 10
Norway (including scrap) -----	^r 7,886	6,797	^e 6,200
Peru ^e -----	10	20	20
South Africa, Republic of:			
Sheet -----	(^e)	(^e)	(^e)
Scrap -----	5,536	5,247	6,927
Spain -----	1,162	^e 1,100	--
Sri Lanka (scrap) -----	5,432	302	^e 220
Sudan -----	^e 550	1,213	^e 580
Tanzania, sheet -----	13	15	^e 18
U.S.S.R. (all grades) ^e -----	92,000	95,000	97,000
United States:			
Sheet -----	5	5	1
Scrap and flake -----	270,000	281,424	352,758
Yugoslavia -----	190	150	^e 155
Total -----	^r 491,872	494,596	587,437

^eEstimate. ²Preliminary. ^rRevised.

¹In addition to the countries listed, the People's Republic of China, Romania, Southern Rhodesia, the Territory of South-West Africa and Sweden are known to produce mica, but available information is inadequate to make reliable estimates of output levels.

²Exports.

³Includes micanite and other built up mica.

⁴Includes condenser film, washer and disks.

⁵Includes sheet, strips, and powder.

^eLess than 1/2 unit.

