

**MICA (NATURAL), SHEET<sup>1</sup>**

(Data in metric tons, unless otherwise noted)

**Domestic Production and Use:** A minor amount of sheet mica, estimated at less than 500 kilograms, was produced in 1999, incidental to scrap and flake mica production and the mining of gemstone-bearing pegmatites. The domestic consuming industry was dependent on imports and shipments of U.S. Government stockpile excesses to meet demand for sheet mica. During 1999, an estimated 3,400 tons of unworked mica split block and mica splittings valued at \$1.5 million was consumed by 14 companies in 7 States, mainly in the East and Midwest. Most was fabricated into parts for electronic and electrical equipment. An additional estimated 1,900 tons of imported worked mica valued at \$12.8 million was also consumed.

<b>Salient Statistics—United States:</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999<sup>e</sup></b>
Production, mine <sup>e</sup>	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Imports, plates, sheets, and strips; worked mica; split block; splittings; other > \$0.55/kg	4,230	6,330	5,760	4,380	5,310
Exports, plates, sheets, and strips; worked mica; crude and rifted into sheet or splittings > \$0.55/kg	935	831	1,060	1,280	1,400
Shipments from Government stockpile excesses	511	1,110	326	557	804
Consumption, apparent	3,800	6,540	5,030	3,660	4,710
Price, average value, dollars per kilogram, muscovite and phlogopite mica, reported:					
Block	59	55	28	26	27
Splittings	1.86	1.75	1.69	1.67	1.70
Stocks, fabricator and trader, yearend	NA	NA	NA	NA	NA
Net import reliance <sup>3</sup> as a percent of apparent consumption	100	100	100	100	100

**Recycling:** None.

**Import Sources (1995-98):** India, 63%; Belgium, 12%; Germany, 11%; China, 5%; and other, 9%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations 12/31/99</b>
	Split block mica	2525.10.0010	Free.
	Mica splittings	2525.10.0020	Free.
	Unworked—other	2525.10.0050	Free.
	Plates, sheets, and strips of agglomerated or reconstructed mica	6814.10.0000	2.7% ad val.
	Worked mica and articles of mica—other	6814.90.0000	2.6% ad val.

**Depletion Allowance:** 23% (Domestic), 15% (Foreign).

**Government Stockpile:**

<b>Material</b>	<b>Uncommitted inventory</b>	<b>Stockpile Status—9-30-99<sup>4</sup></b>			<b>Disposal plan FY 1999</b>	<b>Disposals FY 1999</b>
		<b>Committed inventory</b>	<b>Authorized for disposal</b>			
Block:						
Muscovite	287	277	287	( <sup>5</sup> )	443	
Phlogopite	53	6	53	—	6	
Film, muscovite	1	( <sup>2</sup> )	1	( <sup>5</sup> )	9	
Splittings:						
Muscovite	5,233	57	5,233	( <sup>5</sup> )	317	
Phlogopite	234	—	234	( <sup>5</sup> )	29	

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**Events, Trends, and Issues:** Demand for sheet mica increased in 1999. Imports of splittings from India increased as demand for electrical equipment increased, especially transformers. Imports remained the principal source of sheet mica, and shipments from U.S. Government stockpile excesses continued to be a significant source of supply. The availability of good quality mica remained in short supply. There were no environmental problems associated with the manufacture of mica products.

### World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves <sup>6</sup>	Reserve base <sup>6</sup>
	1998	1999 <sup>e</sup>		
United States	( <sup>2</sup> )	( <sup>2</sup> )	Very small	Small
India	2,100	2,000	Very large	Very large
Russia	1,500	1,500	Moderate	Large
Other countries	200	200	Moderate	Large
World total	3,800	3,700	Large	Large

**World Resources:** There has been no formal evaluation of world resources of sheet mica because of the sporadic occurrence of this material. Large deposits of mica-bearing rock are known to exist in countries such as Brazil, India, and Madagascar. Limited resources of sheet mica are available in the United States. These domestic resources are uneconomic because of the high cost of hand labor required to mine and process the sheet mica.

**Substitutes:** Many materials can be substituted for mica in numerous electrical and electronic uses. Substitutes include acrylic, Benelex®, cellulose acetate, Delrin®, Duranel® N, fiberglass, fishpaper, Kapton®, Kel F®, Kydex®, Lexan®, Lucite®, Mylar®, nylon, nylatron, Nomex®, Noryl®, phenolics, Plexiglass®, polycarbonate, polyester, styrene, Teflon®, vinyl-PVC, and vulcanized fiber. Mica paper made from scrap mica can be substituted for sheet mica in electrical and insulation applications.

<sup>e</sup>Estimated. NA Not available.

<sup>1</sup>See also Mica (Natural), Scrap and Flake.

<sup>2</sup>Less than ½ unit.

<sup>3</sup>Defined as imports - exports + adjustments for Government and industry stock changes.

<sup>4</sup>See Appendix B for definitions.

<sup>5</sup>The total disposal plan for all categories of mica in the National Defense Stockpile, except phlogopite block, is undifferentiated at 1,025 metric tons (2,260,000 pounds).

<sup>6</sup>See Appendix C for definitions.