

MICA (NATURAL)

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: Scrap and flake mica production, excluding low-quality sericite, was estimated to be 44,000 tons in 2012. Mica was mined in Alabama, Georgia, North Carolina, and South Dakota. Scrap mica was recovered principally from mica and sericite schist and as a byproduct from feldspar, kaolin, and industrial sand beneficiation. The majority of domestic production was processed into small particle-size mica by either wet or dry grinding. Primary uses were joint compound, oil-well-drilling additives, paint, roofing, and rubber products. The value of 2012 scrap mica production was estimated to be \$5.0 million.

A minor amount of sheet mica was produced in 2012 as a byproduct at a gemstone mine in Amelia, VA, and as incidental production from feldspar mining in the Spruce Pine area of North Carolina. The domestic consuming industry was dependent upon imports to meet demand for sheet mica. Most sheet mica was fabricated into parts for electronic and electrical equipment.

Salient Statistics—United States:	2008	2009	2010	2011	2012^e
Scrap and flake:					
Production: ^{1, 2}					
Mine	85	51	53	50	44
Ground	98	77	76	80	86
Imports, mica powder and mica waste	25	20	26	27	26
Exports, mica powder and mica waste	9	8	6	6	6
Consumption, apparent ³	101	63	73	72	64
Price, average, dollars per metric ton, reported:					
Scrap and flake	120	128	137	122	125
Ground:					
Dry	251	284	285	281	285
Wet	651	651	651	651	700
Employment, mine, number	NA	NA	NA	NA	NA
Net import reliance ⁴ as a percentage of apparent consumption	16	19	27	30	31
Sheet:					
Production, mine ^e	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)
Imports, plates, sheets, strips; worked mica; split block; splittings; other >\$1.00/kg	1.90	1.50	1.98	2.19	2.32
Exports, plates, sheets, strips; worked mica; crude and rifted into sheet or splittings >\$1.00/kg	2.06	1.11	0.93	1.04	1.59
Shipments from Government stockpile excesses	(⁵)	—	—	—	—
Consumption, apparent	(^{6, 7})	⁶ 0.39	1.05	1.15	0.74
Price, average value, dollars per kilogram, muscovite and phlogopite mica, reported:					
Block	122	121	130	152	156
Splittings	1.53	1.66	1.53	1.63	1.68
Stocks, fabricator and trader, yearend	NA	NA	NA	NA	NA
Net import reliance ⁴ as a percentage of apparent consumption	100	100	100	100	100

Recycling: None.

Import Sources (2008–11): Scrap and flake: Canada, 34%; China, 34%; India, 22%; Finland, 7%; and other, 3%. Sheet: China, 25%; Brazil, 21%; Belgium, 18%; India, 17%; and other, 19%.

Tariff: Item	Number	Normal Trade Relations 12–31–12
Split block mica	2525.10.0010	Free.
Mica splittings	2525.10.0020	Free.
Unworked—other	2525.10.0050	Free.
Mica powder	2525.20.0000	Free.
Mica waste	2525.30.0000	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.

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Depletion Allowance: 22% (Domestic), 14% (Foreign).

Government Stockpile: None.

Events, Trends, and Issues: Domestic production and consumption of scrap and flake mica were estimated to decrease in 2012, for the third consecutive year. The decrease primarily resulted from decreased production of minerals from which mica is a byproduct, and it seemed that the slight recovery in construction materials markets had not resulted in increased mica consumption. Apparent consumption of sheet mica decreased in 2012. No environmental concerns are associated with the manufacture and use of mica products.

Significant stocks of sheet mica previously sold from the National Defense Stockpile (NDS) to domestic and foreign mica traders, brokers, and processors were exported, possibly resulting in understating apparent consumption in 2006 through 2009. The NDS has not held mica since 2008, when the last stocks of muscovite block were sold. Future supplies for U.S. consumption were expected to come increasingly from imports, primarily from Brazil, China, India, and Russia.

World Mine Production and Reserves:

	Scrap and flake			Sheet		Reserves ⁸
	Mine production ^e		Reserves ⁸	Mine production ^e		
	2011	2012		2011	2012	
All types:						
United States ¹	50	44	Large	(⁵)	(⁵)	Very small
Argentina	9	9	Large	—	—	NA
Canada	14	14	Large	—	—	NA
China	760	760	Large	—	—	NA
Finland:	70	70	Large	—	—	NA
France	20	20	Large	—	—	NA
India	7	7	Large	3.5	4.0	Very large
Korea, Republic of	35	36	Large	—	—	NA
Russia	100	100	Large	1.5	1.5	Moderate
Other countries	<u>25</u>	<u>26</u>	<u>Large</u>	<u>0.2</u>	<u>0.2</u>	<u>Moderate</u>
World total (rounded)	1,090	1,100	Large	5.2	5.7	Very large

World Resources: Resources of scrap and flake mica are available in clay deposits, granite, pegmatite, and schist, and are considered more than adequate to meet anticipated world demand in the foreseeable future. World resources of sheet mica have not been formally evaluated 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. Domestic resources are uneconomic because of the high cost of hand labor required to mine and process sheet mica from pegmatites.

Substitutes: Some lightweight aggregates, such as diatomite, perlite, and vermiculite, may be substituted for ground mica when used as filler. Ground synthetic fluorophlogopite, a fluorine-rich mica, may replace natural ground mica for uses that require thermal and electrical properties of mica. Many materials can be substituted for mica in numerous electrical, electronic, and insulation uses. Substitutes include acrylic, cellulose acetate, fiberglass, fishpaper, nylatron, nylon, phenolics, polycarbonate, polyester, styrene, vinyl-PVC, and vulcanized fiber. Mica paper made from scrap mica can be substituted for sheet mica in electrical and insulation applications.

^eEstimated. NA Not available.

¹Sold or used by producing companies.

²Excludes low-quality sericite used primarily for brick manufacturing.

³Based on scrap and flake mica mine production.

⁴Defined as imports – exports + adjustments for Government and industry stock changes.

⁵Less than ½ unit.

⁶See explanation in the Events, Trends, and Issues section.

⁷Apparent consumption calculation in 2008 resulted in a negative number.

⁸See Appendix C for resource/reserve definitions and information concerning data sources.