ABRASIVES (MANUFACTURED)

(Fused aluminum oxide and silicon carbide) (Data in metric tons unless otherwise noted)

<u>Domestic Production and Use:</u> Fused aluminum oxide was produced by two companies at three plants in the United States and Canada. Production of regular-grade fused aluminum oxide had an estimated value of \$1.92 million, and production of high-purity fused aluminum oxide was estimated to have a value of more than \$4.79 million. Silicon carbide was produced by two companies at two plants in the United States. Domestic production of crude silicon carbide had an estimated value of about \$26.4 million. Bonded and coated abrasive products accounted for most abrasive uses of fused aluminum oxide and silicon carbide.

Salient Statistics—United States:	<u>2006</u>	2007	2008	2009	2010 ^e	
Production, 1 United States and Canada (crude):	·	· · · · · · · · · · · · · · · · · · ·				
Fused aluminum oxide, regular	10,000	10,000	10,000	10,000	10,000	
Fused aluminum oxide, high-purity	5,000	5,000	5,000	5,000	5,000	
Silicon carbide	35,000	35,000	35,000	35,000	35,000	
Imports for consumption (U.S.):						
Fused aluminum oxide	209,000	237,000	285,000	64,200	170,000	
Silicon carbide	186,000	164,000	127,000	78,000	140,000	
Exports (U.S.):						
Fused aluminum oxide	15,300	18,200	21,900	12,300	19,000	
Silicon carbide	20,300	19,300	17,000	20,700	24,000	
Consumption, apparent (U.S.):						
Fused aluminum oxide	NA	NA	NA	NA	NA	
Silicon carbide	201,000	180,000	145,000	92,300	150,000	
Price, value of imports, dollars per ton (U.S.):						
Fused aluminum oxide, regular	310	361	512	608	547	
Fused aluminum oxide, high-purity	1,170	1,110	1,230	1,170	1,410	
Silicon carbide	477	550	835	557	609	
Net import reliance ² as a percentage						
of apparent consumption (U.S.):	NI A	NIA	NIA	N.1.A	N.1.0	
Fused aluminum oxide	NA	NA 04	NA 70	NA	NA 77	
Silicon carbide	83	81	76	62	77	

Recycling: Up to 30% of fused aluminum oxide may be recycled, and about 5% of silicon carbide is recycled.

Import Sources (2006–09): Fused aluminum oxide, crude: China, 81%; Canada, 11%; Venezuela, 5%; Brazil, 1%; and other, 2%. Fused aluminum oxide, grain: Brazil, 30%; Germany, 25%; Austria, 17%; Italy, 7%; and other, 21%. Silicon carbide, crude: China, 84%; Venezuela, 5%; Netherlands, 4%; Romania, 3%; and other, 4%. Silicon carbide, grain: China, 42%; Brazil, 23%; Vietnam, 9%; Norway, 6%; and other, 20%.

Tariff: Item	Number	Normal Trade Relations 12-31-10
Fused aluminum oxide, crude White, pink, ruby artificial corundum, greater that 97.5%	2818.10.1000	Free.
fused aluminum oxide, grain Artificial corundum, not elsewhere specified or included, fused	2818.10.2010	1.3% ad val.
aluminum oxide, grain	2818.10.2090	1.3% ad val.
Silicon carbide, crude	2849.20.1000	Free.
Silicon carbide, grain	2849.20.2000	0.5% ad val.

Depletion Allowance: None.

Government Stockpile: None.

ABRASIVES (MANUFACTURED)

Events, Trends, and Issues: Imports and higher operating costs continued to challenge abrasives producers in the United States and Canada. Foreign competition, particularly from China, is expected to persist and further curtail production in North America. Abrasives markets are greatly influenced by activity in the manufacturing sector in the United States. During 2009, downturns in the U.S. manufacturing sector, owing to the impacts of the global economic recession, caused modest decreases in U.S. manufactured abrasives production, but significant decreases in consumption. This was particularly true of manufacturing activities in the aerospace, automotive, furniture, housing, and steel industries. The U.S. abrasive markets also are influenced by economic and technological trends. As the world and the United States slowly began to recover from the global economic recession during 2010, U.S. manufactured abrasives production and consumption also slowly began to show signs of improvement. After large drops in the imports of aluminum oxide and silicon carbide in 2009, imports began to increase during 2010. Global prices of abrasive aluminum oxide and silicon carbide, which had leveled out or dropped during the first three quarters of 2009, began moving steadily higher in the last quarter of 2009. This price trend continued through 2010.

World Production Capacity:

	Fused aluminum oxide		Silicon carbide	
	<u>2009</u>	<u>2010</u>	<u>2009</u>	<u>2010</u>
United States and Canada	60,400	60,400	42,600	42,600
Argentina	_	_	5,000	5,000
Australia	50,000	50,000	_	_
Austria	60,000	60,000	_	_
Brazil	50,000	50,000	43,000	43,000
China	700,000	700,000	455,000	455,000
France	40,000	40,000	16,000	16,000
Germany	80,000	80,000	36,000	36,000
India	40,000	40,000	5,000	5,000
Japan	25,000	25,000	60,000	60,000
Mexico	_	_	45,000	45,000
Norway	_	_	80,000	80,000
Venezuela	_	_	30,000	30,000
Other countries	80,000	80,000	<u> 190,000</u>	<u>190,000</u>
World total (rounded)	1,190,000	1,190,000	1,010,000	1,010,000

<u>World Resources</u>: Although domestic resources of raw materials for the production of fused aluminum oxide are rather limited, adequate resources are available in the Western Hemisphere. Domestic resources are more than adequate for the production of silicon carbide.

<u>Substitutes</u>: Natural and manufactured abrasives, such as garnet, emery, or metallic abrasives, can be substituted for fused aluminum oxide and silicon carbide in various applications.

^eEstimated. NA Not available. — Zero.

¹Rounded to the nearest 5,000 tons to protect proprietary data.

²Defined as imports – exports + adjustments for Government and industry stock changes.