

## MANUFACTURED ABRASIVES

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

**Domestic Production and Use:** Fused aluminum oxide was produced by 5 companies at 10 plants in the United States and Canada. Production of regular-grade fused aluminum oxide was valued at about \$50 million and production of high-purity fused aluminum oxide was valued at about \$15 million. Silicon carbide was produced by four companies at four plants in the United States and Canada. U.S. and Canadian production of crude silicon carbide was valued at about \$35 million.

<b>Salient Statistics—United States:</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996<sup>e</sup></b>
Production, United States and Canada (crude):					
Fused aluminum oxide, regular	143,000	132,000	133,000	126,000	135,000
Fused aluminum oxide, high-purity	24,200	21,300	29,200	33,100	32,000
Silicon carbide	84,300	74,900	84,700	85,900	75,000
Imports for consumption					
Fused aluminum oxide	136,000	158,000	145,000	213,000	110,000
Silicon carbide	89,000	115,000	110,000	172,000	160,000
Exports					
Fused aluminum oxide	12,000	11,000	13,000	11,000	11,000
Silicon carbide	14,000	17,000	16,000	20,000	15,000
Consumption: Apparent					
Fused aluminum oxide	NA	NA	NA	NA	NA
Silicon carbide	NA	NA	NA	NA	NA
Price, range of value, dollars per ton					
Fused aluminum oxide, regular	395	362	361	358	360
Fused aluminum oxide, high-purity	594	621	557	468	500
Silicon carbide	516	540	531	495	500
Stocks, producer	NA	NA	NA	NA	NA
Employment, mine and mill, number	NA	NA	NA	NA	NA
Net import reliance <sup>1</sup> as a percent of apparent consumption	NA	NA	NA	NA	NA

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

**Import Sources (1992-95):** Fused aluminum oxide crude: Canada, 57%; Australia, 29%; and other, 14%. Fused aluminum oxide grain: Canada, 30%; Austria, 27%; China, 22%; and other, 21%. Silicon carbide crude: China, 58%; Canada, 34%; and other, 8%. Silicon carbide grain: Norway, 44%; Brazil, 18%; Germany, 10%; and other, 28%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Most favored nation (MFN) 12/31/96</b>	<b>Non-MFN<sup>2</sup> 12/31/96</b>
Fused aluminum oxide, crude	2818.10.1000	Free	Free.
Fused aluminum oxide, grain	2818.10.2000	1.3% ad val.	4.1% ad val.
Silicon carbide, crude	2849.20.1000	Free	Free.
Silicon carbide, grain	2849.20.2000	0.5% ad val.	1.6% ad val.

**Depletion Allowance:** None.

### **Government Stockpile:**

<b>Material</b>	<b>Stockpile Status—9-30-96</b>			
	<b>Uncommitted inventory</b>	<b>Committed inventory</b>	<b>Authorized for disposal</b>	<b>Disposals Jan.-Sept. 96</b>
Fused aluminum oxide, crude	169,000	20,745	169,000	13,608
Fused aluminum oxide, grain	30,171	814	30,171	2,283
Silicon carbide, crude	20,853	2	20,853	—

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**Events, Trends, and Issues:** Producers in the United States and Canada will continue to face strong competition from abroad. In particular, low-cost silicon carbide from China may lead to diminished production in North America.

### **World Production Capacity:**

	<b>Fused aluminum oxide capacity</b>		<b>Silicon carbide capacity</b>	
	<b>1995</b>	<b>1996<sup>e</sup></b>	<b>1995</b>	<b>1996<sup>e</sup></b>
United States and Canada	220,000	220,000	100,000	100,000
Argentina	—	—	6,000	6,000
Australia	100,000	75,000	—	—
Austria	60,000	60,000	—	—
Brazil	100,000	100,000	43,000	43,000
China	400,000	400,000	250,000	250,000
France	45,000	45,000	16,000	16,000
Germany	150,000	150,000	36,000	36,000
India	20,000	20,000	13,000	13,000
Japan	55,000	55,000	90,000	90,000
Mexico	—	—	25,000	25,000
Norway	—	—	80,000	80,000
Venezuela	—	—	20,000	20,000
Other countries	<u>150,000</u>	<u>175,000</u>	<u>250,000</u>	<u>250,000</u>
World total (rounded)	1,300,000	1,300,000	930,000	930,000

**World Resources:** Although domestic resources of raw materials for production of fused aluminum oxide may be limited, adequate resources are available in the Western Hemisphere. Domestic resources are more than adequate for the production of silicon carbide.

**Substitutes:** Natural and manufactured abrasives, such as garnet or metallic abrasives, can be substitutes for fused aluminum oxide and silicon carbide in various applications.

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

<sup>1</sup>Defined as imports - exports + adjustments for Government and industry stock changes.

<sup>2</sup>See Appendix B.