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

**Domestic Production and Use:** 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 \$2.80 million, and production of high-purity fused aluminum oxide was estimated to have a value of more than \$4.63 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 \$23.7 million. Bonded and coated abrasive products accounted for most abrasive uses of fused aluminum oxide and silicon carbide.

Salient Statistics—United States: Production, <sup>1</sup> United States and Canada (crude):	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006<sup>e</sup></u>
Fused aluminum oxide, regular	20,000	20,000	20,000	10,000	10,000
Fused aluminum oxide, high-purity	10,000	5,000	5,000	5,000	5,000
Silicon carbide	30,000	35,000	35,000	35,000	35,000
Imports for consumption (U.S.): Fused aluminum oxide	179,000	164,000	232,000	244,000	258,000
Silicon carbide	165,000	169,000	209,000	201,000	179,000
Exports (U.S.):					
Fused aluminum oxide	10,300	11,800	13,900	13,900	15,100
Silicon carbide	13,600	13,200	13,900	15,600	21,100
Consumption, apparent (U.S.): Fused aluminum oxide	NA	NA	NA	NA	NA
Silicon carbide	181,000	189,000	230,000	220,000	193,000
Price, dollars per ton United States and Canada:	,	,			,
Fused aluminum oxide, regular	271	279	323	144	240
Fused aluminum oxide, high-purity	494	514	544	656	624
Silicon carbide Net import reliance <sup>2</sup> as a percentage	532	529	614	603	643
of apparent consumption (U.S.):					
Fused aluminum oxide	NA	NA	NA	NA	NA
Silicon carbide	83	82	85	84	82

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

**Import Sources (2002-05):** Fused aluminum oxide, crude: China, 77%; Canada, 11%; Venezuela, 11%; and other, 1%. Fused aluminum oxide, grain: China, 38%; Germany, 15%; Brazil, 14%; Austria, 10%; and other, 23%. Silicon carbide, crude: China, 74%; Venezuela, 9%; Netherlands, 6%; Romania, 5%; and other, 6%. Silicon carbide, grain: China, 35%; Brazil, 24%; Russia, 10%; Venezuela, 10%; and other, 21%.

<u>Tariff</u> : Item	Number	Normal Trade Relations 12-31-06
Fused aluminum oxide, crude	2818.10.1000	Free.
Fused aluminum oxide, grain	2818.10.2000	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:** During fiscal year 2006, the Department of Defense sold 2,140 tons of fused aluminum oxide abrasive grain from the National Defense Stockpile for \$883,000.

## Stockpile Status—9-30-06<sup>3</sup>

	Uncommitted	Committed	Authorized	Disposal plan	Disposals
Material	inventory	inventory	for disposal	FY 2006	FY 2006
Fused aluminum oxide, grain	4,085	88	4,085	4,085	2,140

## **ABRASIVES (MANUFACTURED)**

**Events, Trends, and Issues:** Imports and higher operating costs continued to challenge producers in the United States and Canada. Foreign competition, particularly from China, is expected to persist and further curtail production in North America.

## World Production Capacity:

	Fused aluminum oxide capacity		Silicon carbide capacity		
	<u>2005</u>	<u>2006<sup>e</sup></u>	<u>2005</u>	<u>2006<sup>e</sup></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>	190,000	
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 or metallic abrasives, can be substituted for fused aluminum oxide and silicon carbide in various applications.