

ABRASIVES (MANUFACTURED)

(Fused aluminum oxide, silicon carbide, and metallic abrasives)
(Data in metric tons unless otherwise specified)

Domestic Production and Use: In 2025, fused aluminum oxide was produced by two companies at three plants in the United States and Canada. Production of crude fused aluminum oxide had an estimated value of \$5.1 million. Silicon carbide was produced by two companies at two plants in the United States. Production of crude silicon carbide had an estimated value of about \$25 million. Metallic abrasives were produced by 10 companies operating 11 plants in seven States. Production of metallic abrasives had an estimated value of about \$140 million, and metallic abrasive shipments were valued at \$200 million. Bonded and coated abrasive products accounted for most abrasive uses of fused aluminum oxide and silicon carbide. Metallic abrasives are primarily steel shot and grit and cut wire shot, which are used for sandblasting, peening, and stonecutting applications.

Salient Statistics—United States:	2021	2022	2023	2024	2025^e
Production:					
Fused aluminum oxide, crude ^{1,2}	10,000	20,000	25,000	25,000	20,000
Silicon carbide ²	35,000	40,000	45,000	40,000	30,000
Metallic abrasives	176,000	180,000	198,000	193,000	160,000
Shipments, metallic abrasives	193,000	199,000	227,000	223,000	180,000
Imports for consumption:					
Fused aluminum oxide	159,000	225,000	120,000	161,000	150,000
Silicon carbide	125,000	165,000	114,000	113,000	95,000
Metallic abrasives	26,400	20,100	17,800	16,900	16,000
Exports:					
Fused aluminum oxide	13,500	14,400	9,570	9,190	8,000
Silicon carbide	12,000	12,000	10,100	9,680	8,600
Metallic abrasives	20,100	23,900	24,100	19,300	18,000
Consumption, apparent:					
Fused aluminum oxide ³	146,000	210,000	110,000	152,000	140,000
Silicon carbide ⁴	148,000	193,000	148,000	143,000	120,000
Metallic abrasives ⁵	199,000	195,000	220,000	220,000	180,000
Price, average unit value of imports, dollars per metric ton:					
Fused aluminum oxide, crude	674	797	655	635	699
Fused aluminum oxide, ground and refined	1,290	1,560	1,380	1,440	1,500
Silicon carbide, crude	587	1,080	905	832	829
Metallic abrasives	1,510	2,130	1,850	1,910	2,000
Net import reliance ⁶ as a percentage of apparent consumption:					
Fused aluminum oxide	>95	>95	>95	>95	>95
Silicon carbide	76	79	70	72	74
Metallic abrasives	3	E	E	E	E

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

Import Sources (2021–24): Fused aluminum oxide, crude: China,⁷ 92%; and other, 8%. Fused aluminum oxide, ground and refined: Canada, 27%; China,⁷ 17%; Brazil, 16%; Austria, 15%; and other, 25%. Total fused aluminum oxide: China,⁷ 68%; Canada, 10%; Brazil, 6%; Austria, 5%; and other, 11%. Silicon carbide, crude: China,⁷ 97%; and other, 3%. Silicon carbide, ground and refined: China,⁷ 61%; Brazil, 14%; Canada, 10%; Norway, 8%; and other, 7%. Total silicon carbide: China,⁷ 88%; Brazil, 4%; and other, 8%. Metallic abrasives: Canada, 47%; Thailand, 11%; Turkey, 9%; Japan, 9%; and other, 24%.

Tariff:	Item	Number	Normal Trade Relations 12–31–25
Artificial corundum, crude		2818.10.1000	Free.
White, pink, ruby artificial corundum, greater than 97.5% aluminum oxide, grain		2818.10.2010	1.3% ad valorem.
Artificial corundum, not elsewhere specified or included, fused aluminum oxide, grain		2818.10.2090	1.3% ad valorem.
Silicon carbide, crude		2849.20.1000	Free.
Silicon carbide, grain		2849.20.2000	0.5% ad valorem.
Iron, pig iron, or steel granules		7205.10.0000	Free.

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Depletion Allowance: None.

Government Stockpile: None.

Events, Trends, and Issues: In 2025, China was the world's leading manufacturer of abrasive fused aluminum oxide and abrasive silicon carbide. Imports from China, where production costs were lower, continued to challenge abrasives manufacturers in the United States and Canada. China accounted for 96% of United States imports of crude fused aluminum oxide, 15% of ground and refined fused aluminum oxide imports, 97% of crude silicon carbide imports, and 57% of ground and refined silicon carbide imports. Abrasive products from China remained subject to additional duties under U.S. section 301 actions—such as an extra 7.5% ad valorem on HTS 2818.10.2010 and Chapter 99 tariffs on HTS 2849.20.2000—on top of the Normal Trade Relations (NTR) rates, and HTS 7205.10.0000 continued to have a zero NTR rate, a 3% rate for certain countries, and an additional 25% duty for products from China under HTS 9903.88.03. Foreign competition was expected to persist and continue to limit production in North America. The import quantities of abrasive fused aluminum oxide (crude and ground and refined) in 2025 were 33% lower and 20% higher, respectively, than those in 2024. The import quantities of abrasive silicon carbide (crude and ground and refined) in 2025 were 20% and 18% lower, respectively, than those in 2024.

The United States returned to being a net exporter of metallic abrasives in 2022 through 2025 as compared with being a net importer in 2021. The import quantity of metallic abrasives in 2025 was 6% lower than that in 2024. Canada was the leading supplier of metallic abrasive imports.

The consumption of abrasives in the United States is influenced by activity in the manufacturing sectors that use them, particularly the aerospace, automotive, furniture, housing, and steel industries. The U.S. abrasive markets also are influenced by technological trends.

World Production Capacity:

	Fused aluminum oxide ^e		Silicon carbide ^e	
	2024	2025	2024	2025
United States	60,000	60,000	40,000	40,000
Australia	50,000	50,000	—	—
Austria	90,000	90,000	—	—
Brazil	50,000	50,000	40,000	40,000
China	800,000	800,000	450,000	450,000
France	40,000	40,000	20,000	20,000
Germany	80,000	80,000	35,000	35,000
India	40,000	40,000	5,000	5,000
Japan	15,000	15,000	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	200,000	200,000
World total (rounded)	1,310,000	1,300,000	1,000,000	1,000,000

World Resources:⁸ Although domestic resources of raw materials for fused aluminum oxide production are limited, adequate resources are available in the Western Hemisphere. Domestic resources are more than adequate for silicon carbide production.

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

^eEstimated. E Net exporter. —Zero.

¹Production data for fused aluminum oxide are combined data from the United States and Canada to avoid disclosing company proprietary data.

²Rounded to the nearest 5,000 tons to avoid disclosing company proprietary data.

³Defined as imports – exports because production includes data from Canada; actual consumption is higher than that shown.

⁴Defined as production + imports – exports.

⁵Defined as shipments + imports – exports.

⁶Defined as imports – exports.

⁷Includes Hong Kong.

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