

Mineral Industry Surveys

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MANUFACTURED ABRASIVES IN THE FIRST QUARTER 2022

The U.S. Geological Survey (USGS) collects quarterly data on manufactured abrasives through its survey of producers. Manufactured abrasives included in this report are metallic abrasives, fused aluminum oxide, and silicon carbide. Where indicated, data from the United States and Canada are combined to avoid disclosing proprietary information. Except where noted, the quantities cited in this report are in metric units. All unit value calculations in this report are based on unrounded data.

Metallic Abrasives

During the first quarter of 2022, an estimated 43,000 metric tons (t) of steel shot and grit valued at an estimated \$37 million was produced, and an estimated 48,000 t valued at an estimated \$43 million was shipped in the United States. This was compared with an estimated 43,000 t valued at \$25 million produced and an estimated 47,000 t valued at \$32 million shipped during the first quarter of 2021. At least one company produced shot and grit from reclaimed material. Production of other types of metallic shot and grit (primarily cut wire shot) was estimated to be 1,000 t valued at \$3 million, unchanged compared with those of the first quarter of 2021. The quantity of shipments of other types of metallic shot was estimated to be 1,000 t, unchanged compared with those of the first quarter of 2021, but the value decreased to \$3 million from \$4 million in the first quarter of 2021. Total first quarter 2022 production of metallic abrasives was 44,000 t valued at \$40 million, for an average unit value of \$909 per ton. Total first quarter 2022 shipments of metallic abrasives were 49,000 t valued at \$46 million, for an average unit value of \$939 per ton (table 1).

Imports of all types of metallic abrasives during the first quarter of 2022 were 5,850 t valued at \$11.5 million, for an average unit value of \$1,970 per ton (table 2).

Exports of all types of metallic abrasives during the first quarter of 2022 were 4,980 t valued at \$8.83 million, for an

average unit value of \$1,770 per ton (table 2).

Fused Aluminum Oxide

Combined production of regular-grade crude fused aluminum oxide in the United States and Canada during the first quarter of 2022 was estimated to be 5,000 t with an estimated value of \$800,000, which has been essentially unchanged for several years owing to production figures being rounded to the nearest 5,000 t to avoid disclosing proprietary data (table 1).

Imports of crude fused aluminum oxide during the first quarter of 2022 were 29,700 t valued at \$23.0 million, for an average unit value of \$774 per ton. Imports of ground and refined fused aluminum oxide for the same period were 11,400 t valued at \$16.5 million, for an average unit value of \$1,440 per ton (table 2).

Exports of crude fused aluminum oxide for the first quarter of 2022 were 4,400 t valued at \$14.6 million, for an average unit value of \$3,310 per ton (table 2).

Silicon Carbide

Total production of abrasive-grade silicon carbide in the United States and Canada during the first quarter of 2022 was estimated to be 10,000 t with an estimated value of \$7.40 million, which has been essentially unchanged in quantity and value for several years owing to production figures being rounded to the nearest 5,000 t to avoid disclosing proprietary data (table 1).

Imports of crude silicon carbide during the first quarter of 2022 were 20,500 t valued at \$19.8 million, for an average unit value of \$968 per ton. Imports of ground and refined silicon carbide for the same period were 9,880 t valued at \$26.9 million, for an average unit value of \$2,730 per ton (table 2).

Exports of crude silicon carbide during the first quarter of 2022 were 976 t with a value of \$1.51 million, for an

average unit value of \$1,550 per ton. Exports of ground and refined silicon carbide for the same period were 1,650 t valued at \$3.76 million, for an average unit value of \$2,280 per ton (table 2).

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TABLE 1
PRODUCTION AND SHIPMENTS OF ALUMINUM OXIDE, SILICON CARBIDE, AND METALLIC ABRASIVES¹

Source and product	2021							
	1st quarter		2d quarter		3d quarter		4th quarter	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
United States, production:								
Steel shot and grit ^e	43,000	\$25,000	43,000	\$38,000	43,000	\$37,000	43,000	\$37,000
Other shot and grit ^{e, 2}	1,000	3,000	1,000	3,000	1,000	3,000	1,000	2,000
Total ^e	44,000	28,000	44,000	41,000	44,000	40,000	44,000	39,000
United States, shipments:								
Steel shot and grit ^e	47,000	32,000	46,000	43,000	48,000	44,000	48,000	43,000
Other shot and grit ^{e, 2}	1,000	4,000	1,000	4,000	1,000	3,000	1,000	3,000
Total ^e	48,000	36,000	47,000	47,000	49,000	47,000	49,000	46,000
United States and Canada, production: ^{e, 3}								
Crude aluminum oxide, regular-grade	5,000	800	5,000	800	5,000	800	5,000	800
Silicon carbide ⁴	10,000	7,400	10,000	7,400	10,000	7,400	10,000	7,400

Source and product	2021		2022	
	1st quarter–4th quarter		1st quarter	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
United States, production:				
Steel shot and grit ^e	172,000	\$137,000	43,000	\$37,000
Other shot and grit ^{e, 2}	4,000	11,000	1,000	3,000
Total ^e	176,000	148,000	44,000	40,000
United States, shipments:				
Steel shot and grit ^e	189,000	162,000	48,000	43,000
Other shot and grit ^{e, 2}	4,000	14,000	1,000	3,000
Total ^e	193,000	176,000	49,000	46,000
United States and Canada, production: ^{e, 3}				
Crude aluminum oxide, regular-grade	20,000	3,200	5,000	800
Silicon carbide ⁴	40,000	29,600	10,000	7,400

^eEstimated.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes cut wire shot and reclaimed shot and grit from primary producers.

³Quantities are rounded to the nearest 5,000 tons to avoid disclosing proprietary data. Values are rounded to avoid disclosing proprietary data.

⁴Includes materials for metallurgical uses and other applications.

TABLE 2
U.S. EXPORTS AND IMPORTS FOR CONSUMPTION OF ALUMINUM OXIDE, SILICON CARBIDE, AND METALLIC ABRASIVES¹

Source and product	2021							
	1st quarter		2d quarter		3d quarter		4th quarter	
	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)
Exports:								
Metallic abrasives	4,660	\$8,400	4,900	\$8,400	5,380	\$9,200	5,210	\$8,480
Aluminum oxide, crude	2,790	10,700	3,510	15,600	3,300	13,300	3,910	15,000
Silicon carbide:								
Crude	604	853	743	1,480	802	1,620	718	1,300
Ground and refined	2,270	4,880	3,020	5,470	2,070	4,710	1,740	4,960
Imports for consumption:								
Metallic abrasives	7,980	9,220	6,560	9,590	5,770	10,400	6,080	10,600
Aluminum oxide:								
Crude	26,100	16,100	18,300	12,000	24,900	17,600	35,500	25,000
Ground and refined	10,200	12,800	14,900	19,000	16,400	20,700	12,600	17,100
Silicon carbide:								
Crude	17,500	8,540	13,900	6,850	31,400	18,800	29,400	20,000
Ground and refined	7,860	16,400	7,390	17,400	6,010	16,500	11,200	25,000
Source and product	2021		2022					
	1st quarter–4th quarter		1st quarter					
	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)				
Exports:								
Metallic abrasives	20,200	\$34,500	4,980	\$8,830				
Aluminum oxide, crude	13,500	54,600	4,400	14,600				
Silicon carbide:								
Crude	2,870	5,260	976	1,510				
Ground and refined	9,100	20,000	1,650	3,760				
Imports for consumption:								
Metallic abrasives	26,400	39,800	5,850	11,500				
Aluminum oxide:								
Crude	105,000	70,700	29,700	23,000				
Ground and refined	54,100	69,600	11,400	16,500				
Silicon carbide:								
Crude	92,200	54,100	20,500	19,800				
Ground and refined	32,400	75,200	9,880	26,900				

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Export values are free alongside ship values; import values are customs values.

Source: U.S. Census Bureau.