

# Mineral Industry Surveys

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## MANUFACTURED ABRASIVES IN THE THIRD 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 third quarter of 2022, an estimated 45,700 metric tons (t) of steel shot and grit valued at an estimated \$36.3 million was produced, and an estimated 50,000 t valued at an estimated \$42.0 million was shipped in the United States. This was compared with an estimated 43,000 t valued at \$37.0 million produced and an estimated 48,000 t valued at \$44.0 million shipped during the third quarter of 2021 and an estimated 43,100 t valued at \$41.8 million produced and an estimated 46,600 t valued at \$46.7 million shipped during the second quarter of 2022. At least one company produced shot and grit from reclaimed material. Production and shipments of other types of metallic shot and grit (primarily cut wire shot) were each estimated to be 1,000 t valued at \$3 million, unchanged compared with production and shipments of 1,000 t valued at \$3 million in both the third quarter of 2021 and the second quarter of 2022. Total third quarter 2022 production of metallic abrasives was 46,700 t valued at \$39.3 million, for an average unit value of \$841 per metric ton. Total third quarter 2022 shipments of metallic abrasives were 51,000 t valued at \$45.0 million, for an average unit value of \$882 per metric ton (table 1).

Imports of all types of metallic abrasives during the third quarter of 2022 were 4,180 t valued at \$9.35 million, for an average unit value of \$2,240 per metric ton (table 2).

Exports of all types of metallic abrasives during the third quarter of 2022 were 6,570 t valued at \$10.7 million, for an average unit value of \$1,620 per metric ton (table 2).

### Fused Aluminum Oxide

Combined production of regular-grade crude fused aluminum oxide in the United States and Canada during the third quarter of 2022 was estimated to be 5,000 t with an estimated value of \$800,000, which has been 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 third quarter of 2022 were 60,800 t valued at \$49.2 million, for an average unit value of \$809 per metric ton. Imports of ground and refined fused aluminum oxide for the same period were 17,700 t valued at \$29.3 million, for an average unit value of \$1,660 per metric ton (table 2).

Exports of crude fused aluminum oxide for the third quarter of 2022 were 2,870 t valued at \$11.6 million, for an average unit value of \$4,040 per metric ton (table 2).

### Silicon Carbide

Total production of abrasive-grade silicon carbide in the United States and Canada during the third quarter of 2022 was estimated to be 10,000 t with an estimated value of \$6.7 million, which has been unchanged in quantity from both the third quarter of 2021 and the second quarter of 2022, but the value was 9% less than both the third quarter of 2021 and the second quarter of 2022 (table 1).

Imports of crude silicon carbide during the third quarter of 2022 were 45,800 t valued at \$49.4 million, for an average unit value of \$1,080 per metric ton. Imports of ground and refined silicon carbide for the same period were 9,520 t valued at \$38.7 million, for an average unit value of \$4,060 per metric ton (table 2).

Exports of crude silicon carbide during the third quarter of 2022 were 942 t with a value of \$2.09 million, for an average unit value of \$2,220 per metric ton. Exports of ground and refined silicon carbide for the same period were 2,160 t valued at \$6.33 million, for an average unit value of \$2,930 per metric ton (table 2).

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TABLE 1  
PRODUCTION AND SHIPMENTS OF ALUMINUM OXIDE, SILICON CARBIDE, AND METALLIC ABRASIVES<sup>1</sup>

Source and product	2021					
	3d quarter		4th quarter		1st quarter–4th quarter	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
United States, production:						
Steel shot and grit <sup>e</sup>	43,000	\$37,000	43,000	\$37,000	172,000	\$137,000
Other shot and grit <sup>e, 2</sup>	1,000	3,000	1,000	2,000	4,000	11,000
Total <sup>e</sup>	44,000	40,000	44,000	39,000	176,000	148,000
United States, shipments:						
Steel shot and grit <sup>e</sup>	48,000	44,000	48,000	43,000	189,000	162,000
Other shot and grit <sup>e, 2</sup>	1,000	3,000	1,000	3,000	4,000	14,000
Total <sup>e</sup>	49,000	47,000	49,000	46,000	193,000	176,000
United States and Canada, production: <sup>e, 3</sup>						
Crude aluminum oxide, regular-grade	5,000	800	5,000	800	20,000	3,200
Silicon carbide <sup>4</sup>	10,000	7,400	10,000	7,400	40,000	29,600

  

Source and product	2022					
	1st quarter		2d quarter		3d quarter	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
United States, production:						
Steel shot and grit <sup>e</sup>	43,000	\$37,000	43,100	\$41,800	45,700	\$36,300
Other shot and grit <sup>e, 2</sup>	1,000	3,000	1,000	3,000	1,000	3,000
Total <sup>e</sup>	44,000	40,000	44,100	44,800	46,700	39,300
United States, shipments:						
Steel shot and grit <sup>e</sup>	48,000	43,000	46,600	46,700	50,000	42,000
Other shot and grit <sup>e, 2</sup>	1,000	3,000	1,000	3,000	1,000	3,000
Total <sup>e</sup>	49,000	46,000	47,600	49,700	51,000	45,000
United States and Canada, production: <sup>e, 3</sup>						
Crude aluminum oxide, regular-grade	5,000	800	5,000	800	5,000	800
Silicon carbide <sup>4</sup>	10,000	7,400	10,000	7,400	10,000	6,700

<sup>e</sup>Estimated.

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

<sup>2</sup>Includes cut wire shot and reclaimed shot and grit from primary producers.

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

<sup>4</sup>Includes materials for metallurgical uses and other applications.

TABLE 2  
U.S. EXPORTS AND IMPORTS FOR CONSUMPTION OF ALUMINUM OXIDE, SILICON CARBIDE, AND METALLIC ABRASIVES<sup>1</sup>

Source and product	2021					
	3d quarter		4th quarter		1st quarter–4th quarter	
	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)
Exports:						
Metallic abrasives	5,380	\$9,200	5,210	\$8,490	20,100	\$34,500
Aluminum oxide, crude	3,300	13,300	3,890	14,500	13,500	54,100
Silicon carbide:						
Crude	802	1,620	718	1,300	2,870	5,260
Ground and refined	2,060	4,730	1,750	4,990	9,100	20,100
Imports for consumption:						
Metallic abrasives	5,770	10,300	6,080	10,600	26,400	39,800
Aluminum oxide:						
Crude	24,900	17,600	35,500	25,000	105,000	70,600
Ground and refined	16,400	20,700	12,600	17,100	54,200	69,700
Silicon carbide:						
Crude	31,400	18,800	29,400	20,000	92,200	54,100
Ground and refined	6,040	16,600	11,200	25,000	32,500	75,400
Source and product	2022					
	1st quarter		2d quarter		3d quarter	
	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)
Exports:						
Metallic abrasives	4,980	\$8,830	5,520	\$9,860	6,570	\$10,600
Aluminum oxide, crude	4,400	14,600	4,440	14,500	2,870	11,600
Silicon carbide:						
Crude	976	1,510	1,130	1,600	942	2,090
Ground and refined	1,650	3,760	2,360	6,650	2,160	6,330
Imports for consumption:						
Metallic abrasives	5,850	11,500	5,350	12,600	4,180	9,350
Aluminum oxide:						
Crude	29,700	23,000	32,100	26,400	60,800	49,200
Ground and refined	11,400	16,500	18,700	26,300	17,700	29,300
Silicon carbide:						
Crude	20,500	19,800	31,600	33,400	45,800	49,400
Ground and refined	9,880	26,900	10,600	35,300	9,520	38,700

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

<sup>2</sup>Export values are free alongside ship values; import values are customs values.

Source: U.S. Census Bureau.