

# Mineral Industry Surveys

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## MANUFACTURED ABRASIVES IN THE THIRD QUARTER 2019

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 2019, an estimated 43,000 metric tons (t) of steel shot and grit valued at an estimated \$26 million were produced and an estimated 47,700 t valued at \$32 million were shipped in the United States. This was compared with 44,000 t valued at \$26 million produced and 47,900 t valued at \$33 million shipped, respectively, during the same period in 2018. 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 1000 t valued at \$2 million essentially unchanged compared with that of the third quarter of 2018. Shipments of other types of metallic shot in the third quarter of 2019 were 824 t valued at \$3 million, compared with shipments during the third quarter of 2018, which were 1,000 t valued at \$3 million. Total third quarter 2019 production of metallic abrasives was 44,000 t valued at \$28 million, for an average unit value of \$636 per ton. Total third quarter 2019 shipments of metallic abrasives were 48,500 t valued at \$35 million, for an average unit value of \$721 per ton (table 1).

Imports of all types of metallic shot and grit during the third quarter of 2019 were 6,680 t valued at \$9.1 million for an average of \$1,360 per ton (table 2).

Exports of all types of metallic abrasives during the third quarter of 2019 were 8,080 t valued at \$9.67 million, for an average unit value of \$1,200 per 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 2019 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 third quarter of 2019 were 38,600 t valued at \$27.5 million. The average unit value of imported crude fused aluminum oxide was \$713 per ton (table 2).

Imports of ground and refined fused aluminum oxide for the third quarter of 2019 were 16,800 t valued at \$19.2 million. The average unit value of imported ground and refined fused aluminum oxide was \$1,140 per ton (table 2).

Exports of crude fused aluminum oxide for the third quarter of 2019 were 3,830 t valued at \$10.6 million, or \$2,760 per ton (table 2).

### Silicon Carbide

Total production of abrasive-grade silicon carbide in the United States and Canada during the third quarter of 2019 was estimated to be 10,000 t with an estimated value of \$7.4 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 third quarter of 2019 were 36,700 t valued at \$25.1 million. The average unit value of imported crude silicon carbide was \$683 per ton.

Imports of ground and refined silicon carbide for the same period were 6,180 t valued at \$13.1 million (table 2).

Exports of crude silicon carbide during the third quarter of 2019 were 467 t with a value of \$1.12 million, or \$2,390 per

ton. Third quarter exports of ground and refined silicon carbide were 1,650 t valued at \$3.9 million, or \$2,360 per 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	2018					
	3d quarter		4th quarter		1st quarter–4th quarter	
	Quantity (metric tons)	Value <sup>e</sup> (thousands)	Quantity (metric tons)	Value <sup>e</sup> (thousands)	Quantity (metric tons)	Value <sup>e</sup> (thousands)
United States, production:						
Steel shot and grit <sup>e</sup>	44,000	\$26,000	44,000	\$26,000	176,000	\$104,000
Other shot and grit <sup>e,2</sup>	1,000	2,000	1,000	2,000	4,000	8,600
Total	45,000	28,000	45,000	28,000	180,000	113,000
United States, shipments:						
Steel shot and grit <sup>e</sup>	47,900	33,000	48,000	33,000	192,000	132,000
Other shot and grit <sup>e,2</sup>	1,000	3,000	1,000	3,000	4,000	12,000
Total	48,900	36,000	49,000	36,000	196,000	144,000
United States and Canada, production: <sup>e,3</sup>						
Crude aluminum oxide, regular-grade	5,000	800	5,000	800	10,000	1,700
Silicon carbide <sup>4</sup>	10,000	7,400	10,000	7,400	35,000	26,000
Source and product	2019					
	1st quarter		2d quarter		3d quarter	
	Quantity (metric tons)	Value <sup>e</sup> (thousands)	Quantity (metric tons)	Value <sup>e</sup> (thousands)	Quantity (metric tons)	Value <sup>e</sup> (thousands)
United States, production:						
Steel shot and grit <sup>e</sup>	44,000	\$26,000	43,000	\$26,000	43,000	\$26,000
Other shot and grit <sup>e,2</sup>	1,000	3,000	1,000	3,000	1,000	2,000
Total	44,200	28,400	44,000	29,000	44,000	28,000
United States, shipments:						
Steel shot and grit <sup>e</sup>	47,700	32,000	47,600	32,000	47,700	32,000
Other shot and grit <sup>e,2</sup>	827	3,000	876	4,000	824	3,000
Total	48,500	35,000	48,500	36,000	48,500	35,000
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	7,400

<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	2018					
	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)
<b>Exports:</b>						
Metallic abrasives	8,620	\$10,800	8,070	\$9,510	33,600	\$42,000
Aluminum oxide, crude	4,800	14,500	5,500	13,900	19,300	59,600
<b>Silicon carbide:</b>						
Crude	880	1,350	975	1,590	3,500	5,010
Ground and refined	1,570	4,140	2,150	5,960	6,630	19,300
<b>Imports for consumption:</b>						
Metallic abrasives	6,210	8,710	7,320	9,250	29,900	35,300
<b>Aluminum oxide:</b>						
Crude	30,200	21,300	43,400	30,800	122,000	84,300
Ground and refined	19,200	24,100	18,100	23,500	70,600	90,700
<b>Silicon carbide:</b>						
Crude	32,100	23,900	25,400	16,000	107,000	71,600
Ground and refined	12,400	20,500	8,940	19,200	39,500	76,700
Source and product	2019					
	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)
<b>Exports:</b>						
Metallic abrasives	7,690	\$9,160	8,130	\$9,750	8,080	\$9,670
Aluminum oxide, crude	5,250	17,100	6,350	19,200	3,830	10,600
<b>Silicon carbide:</b>						
Crude	777	1,440	607	1,380	467	1,120
Ground and refined	3,140	5,750	2,030	4,590	1,650	3,900
<b>Imports for consumption:</b>						
Metallic abrasives	7,080	9,160	7,860	10,100	6,680	9,100
<b>Aluminum oxide:</b>						
Crude	34,800	25,100	23,000	16,900	38,600	27,500
Ground and refined	15,800	20,100	17,200	23,800	16,800	19,200
<b>Silicon carbide:</b>						
Crude	18,100	13,400	15,100	13,300	36,700	25,100
Ground and refined	10,000	18,900	7,590	15,600	6,180	13,100

<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.