



# Mineral Industry Surveys

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**For information, contact:**

Lori E. Apodaca, Acting Abrasives Commodity Specialist  
National Minerals Information Center  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-7724, Fax: (703) 648-7757  
Email: lapodaca@usgs.gov

Hodan A. Fatah (Data)  
Telephone: (703) 648-4971  
Fax: (703) 648-7975  
Email: hfatah@usgs.gov

**Internet:** <http://www.usgs.gov/centers/nmic>

## MANUFACTURED ABRASIVES IN THE FOURTH QUARTER 2020

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 fourth quarter of 2020, an estimated 43,000 metric tons (t) of steel shot and grit valued at an estimated \$26 million was produced, and an estimated 48,000 t valued at \$33 million was shipped in the United States. This was the same as that in the fourth quarter of 2019. 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) was estimated to be 1,000 t valued at \$2 million and \$3 million, respectively, essentially unchanged compared with that of the fourth quarter of 2019. Total fourth quarter 2020 production of metallic abrasives was 44,000 t valued at \$28 million, for an average unit value of \$636 per ton. Total fourth quarter 2020 shipments of metallic abrasives were 49,000 t valued at \$36 million, for an average unit value of \$735 per ton. Total production in 2020 for all types of steel shot and grit was estimated to be 176,000 t valued at \$115 million compared with 177,000 t valued at \$114 million for that of 2019 (table 1).

Imports of all types of metallic abrasives during the fourth quarter of 2020 were 8,210 t valued at \$8.55 million, for an average unit value of \$1,040 per ton (table 2).

Exports of all types of metallic abrasives during the fourth quarter of 2020 were 4,700 t valued at \$6.00 million, for an average unit value of \$1,280 per ton (table 2).

### Fused Aluminum Oxide

Combined production of regular-grade crude fused aluminum oxide in the United States and Canada during the fourth quarter of 2020 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. Total production in 2020 for regular-grade crude fused aluminum oxide was 10,000 t valued at \$1.70 million, which was unchanged in quantity and value from that of 2019 (table 1).

Imports of crude fused aluminum oxide during the fourth quarter of 2020 were 13,500 t valued at \$8.19 million, for an average unit value of \$608 per ton. Imports of ground and refined fused aluminum oxide for the same period were 10,900 t valued at \$12.4 million, for an average unit value of \$1,140 per ton (table 2).

Exports of crude fused aluminum oxide for the fourth quarter of 2020 were 2,320 t valued at \$8.15 million, for an average unit value of \$3,520 per ton (table 2).

### Silicon Carbide

Total production of abrasive-grade silicon carbide in the United States and Canada during the fourth quarter of 2020 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. Total production in 2020 of abrasive-grade silicon carbide was 35,000 t valued at \$26.0 million, which was unchanged in quantity and value from that of 2019 (table 1).

Imports of crude silicon carbide during the fourth quarter of 2020 were 19,800 t valued at \$11.6 million, for an average unit value of \$589 per ton. Imports of ground and refined silicon carbide for the same period were 6,300 t valued at

\$13.4 million, for an average unit value of \$2,120 per ton (table 2).

Exports of crude silicon carbide during the fourth quarter of 2020 were 521 t with a value of \$2.62 million, for an average unit value of \$5,020 per ton. Exports of ground and refined silicon carbide for the same period were 1,660 t valued at \$3.32 million, for an average unit value of \$2,000 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	2019			
	4th quarter		1st quarter–4th quarter	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
<b>United States, production:</b>				
Steel shot and grit <sup>e</sup>	43,000	\$26,000	173,000	\$104,000
Other shot and grit <sup>e, 2</sup>	1,000	2,000	4,000	10,000
<b>Total<sup>e</sup></b>	<b>44,000</b>	<b>28,000</b>	<b>177,000</b>	<b>114,000</b>
<b>United States, shipments:</b>				
Steel shot and grit <sup>e</sup>	48,000	33,000	191,000	129,000
Other shot and grit <sup>e, 2</sup>	1,000	3,000	4,000	13,000
<b>Total<sup>e</sup></b>	<b>49,000</b>	<b>36,000</b>	<b>195,000</b>	<b>142,000</b>
<b>United States and Canada, production:<sup>e, 3</sup></b>				
Crude aluminum oxide, regular-grade	5,000	800	10,000	1,700
Silicon carbide <sup>4</sup>	10,000	7,400	35,000	26,000

  

Source and product	2020									
	1st quarter		2d quarter		3d quarter		4th quarter		1st quarter–4th quarter	
	Quantity (metric tons)	Value (thousands)								
<b>United States, production:</b>										
Steel shot and grit <sup>e</sup>	43,000	\$26,000	43,000	\$26,000	43,000	\$26,000	43,000	\$26,000	172,000	\$104,000
Other shot and grit <sup>e, 2</sup>	1,000	3,000	1,000	3,000	1,000	3,000	1,000	2,000	4,000	\$11,000
<b>Total<sup>e</sup></b>	<b>44,000</b>	<b>29,000</b>	<b>44,000</b>	<b>29,000</b>	<b>44,000</b>	<b>29,000</b>	<b>44,000</b>	<b>28,000</b>	<b>176,000</b>	<b>115,000</b>
<b>United States, shipments:</b>										
Steel shot and grit <sup>e</sup>	48,000	33,000	47,000	32,000	47,000	32,000	48,000	33,000	190,000	130,000
Other shot and grit <sup>e, 2</sup>	1,000	4,000	1,000	4,000	1,000	4,000	1,000	3,000	4,000	15,000
<b>Total<sup>e</sup></b>	<b>49,000</b>	<b>37,000</b>	<b>48,000</b>	<b>36,000</b>	<b>48,000</b>	<b>36,000</b>	<b>49,000</b>	<b>36,000</b>	<b>194,000</b>	<b>145,000</b>
<b>United States and Canada, production:<sup>e, 3</sup></b>										
Crude aluminum oxide, regular-grade	5,000	800	5,000	800	5,000	800	5,000	800	10,000	1,700
Silicon carbide <sup>4</sup>	10,000	7,400	10,000	7,400	10,000	7,400	10,000	7,400	35,000	26,000

<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 company proprietary data. Values are rounded to avoid disclosing company 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	2019				2020									
	4th quarter		1st quarter–4th quarter		1st quarter		2d quarter		3d quarter		4th quarter		1st quarter–4th quarter	
	Quantity (metric tons)	Value <sup>2</sup> (thousands)												
Exports:														
Metallic abrasives	7,260	\$8,390	31,200	\$37,000										
Aluminum oxide, crude	2,990	9,190	18,400	56,000										
Silicon carbide:														
Crude	491 <sup>r</sup>	1,310	2,340	5,250										
Ground and refined	2,340	3,900	9,160	18,100										
Imports for consumption:														
Metallic abrasives	6,280	8,110	27,900	36,400										
Aluminum oxide:														
Crude	21,400	14,800	118,000	84,400										
Ground and refined	16,000	19,100	65,800	82,200										
Silicon carbide:														
Crude	29,400	17,800	99,300	69,600										
Ground and refined	7,630	14,600	31,500	62,300										

<sup>r</sup>Revised.

<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.