

# Mineral Industry Surveys

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## MANUFACTURED ABRASIVES IN THE THIRD QUARTER 2008

The U.S. Geological Survey (USGS) collects quarterly data on manufactured abrasives through its survey of producers. Manufactured abrasives included in this report are fused aluminum oxide, silicon carbide, and metallic abrasives. Where indicated, Canadian and United States data are combined to protect 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.

### Fused Aluminum Oxide

The United States and Canadian combined production during the third quarter of 2008 was estimated to be 5,000 metric tons (t) of regular-grade crude fused aluminum oxide with an estimated value of \$800,000. Two companies, operating one plant in Canada and two in the United States, produced fused aluminum oxide. This total production figure has been rounded to the nearest 5,000 t to avoid disclosing proprietary data.

According to the U.S. Census Bureau, U.S. imports of crude fused aluminum oxide for 2008 through the month of September were 214,000 t valued at \$107 million, or an average of \$498 per ton. About 90% of the imports came from China and 9% from Venezuela and France, combined. Imports of crude fused aluminum oxide from China may not all be abrasive-quality material.

U.S. imports of refined and ground fused aluminum oxide for 2008 through the month of September were 30,100 t valued at \$37.4 million, or an average of \$1,244 per ton.

U.S. exports of crude fused aluminum oxide for 2008 through the month of September were 18,000 t. The exports were valued at \$48.0 million, or \$2,663 per ton. Canada received 38% of the exports that were shipped; Germany, 18%; Mexico, 13%; Japan, 9%; and others, 22%.

The U.S. Department of Defense had stored fused aluminum oxide in the National Defense Stockpile (NDS), but all stocks of both the crude fused aluminum oxide and fused aluminum oxide abrasive grain have been sold. No further stockpiling of crude fused aluminum oxide by the Department of Defense is anticipated.

### Silicon Carbide

Abrasive-grade silicon carbide is produced by one company in the United States. The total production of abrasive-grade silicon carbide during the third quarter of 2008 was estimated to be 10,000 t, with an estimated value of \$7.8 million. This total production figure has been rounded to the nearest 5,000 t to avoid disclosing proprietary data.

Total U.S. imports of crude silicon carbide for 2008 through the month of September were 65,800 t valued at \$51.3 million; imports from China alone were 62,100 t valued at \$46.2 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$1,377 per ton; the average price of Chinese crude was \$744 per ton. U.S. imports of refined and ground silicon carbide for the same period were 32,000 t valued at \$57.7 million, or an average of \$1,801 per ton. During the third quarter of 2008, China accounted for 94% of the crude material and 52% of the refined and ground material.

U.S. exports of crude silicon carbide for 2008 through the month of September were reported to be 7,050 t with a value of \$17.2 million. Exports of refined and ground silicon carbide were 5,040 t valued at \$16.9 million. About 98% of the crude material was shipped to, in decreasing order of quantity, Norway, Mexico, and Japan. About 94% of the refined material went to, in decreasing order of quantity, Canada, Mexico, Japan, Germany, the United Kingdom, China, and Norway.

The U.S. Department of Defense also had stored silicon carbide in the stockpile, but the NDS has sold all stocks of the silicon carbide. No further stockpiling is anticipated.

### Metallic Abrasives

Metallic abrasives information was collected from 11 companies operating 12 U.S. plants. During the third quarter of 2008, six companies produced 46,500 t of steel shot and grit, an 8% decrease compared with that of the same period in 2007. At least one of the companies produced shot and grit from reclaimed material. Total third quarter 2008 production was valued at \$22.1 million, or an average of \$474 per ton. Total production in 2007 was 201,000 t valued at \$87.9 million.

Shipments of steel shot and grit in the third quarter of 2008 were 45,100 t valued at \$21.6 million, or an average of \$480 per ton, compared with shipments during the third quarter of 2007, which were 53,700 t valued at \$26.4 million for an average of \$500 per ton.

During the third quarter, five companies produced 465 t of other types of metallic shot and grit (primarily cut wire shot) valued at \$1.83 million.

Imports of all types of metallic shot and grit for 2008 through the month of September were 30,700 t valued at \$22.8 million

for an average of \$743 per ton. Sweden was the largest supplier, accounting for 54% of the tonnage imported.

Exports of all types of metallic abrasives for 2008 through the month of September were 27,700 t valued at \$39.5 million, or an average of \$1,429 per ton. Shipments to China accounted for 40% of the exports; an additional 26% was shipped to Canada and 22% was shipped to Mexico.

TABLE 1  
MANUFACTURED ABRASIVES<sup>1</sup>

(Metric tons, unless otherwise specified)

Source and product	2007				2008					
	Third quarter		Fourth quarter		First quarter		Second quarter		Third quarter	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
United States and Canada, production: <sup>2</sup>										
Silicon carbide <sup>3</sup>	10,000	\$7,400	10,000	\$7,400	10,000	\$7,400	10,000	\$7,400	10,000	\$7,800
Crude aluminum oxide, regular-grade	5,000	800	5,000	800	5,000	800	5,000	800	5,000	800
United States, production:										
Steel shot and grit	50,400	23,100	50,200	23,000	70,800	32,800	53,300	25,000	46,500	22,100
Other shot and grit <sup>4</sup>	416	1,830	413	1,810	500	2,030	503	2,270	465	1,830
Total	50,800	25,000	50,600	24,800	71,300	34,800	53,800	27,300	47,000	23,900
United States, shipments:										
Steel shot and grit	53,700	26,400	53,900	25,200	70,800	34,500	55,100	27,500	45,100	21,600
Other shot and grit <sup>4</sup>	435	2,050	416	1,940	495	2,250	496	2,230	484	2,150
Total	54,200	28,400	54,300	27,200	71,300	36,800	55,600	29,700	45,500	23,800

<sup>6</sup>Estimated.

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

<sup>2</sup>Quantities are rounded to the nearest 5,000 tons to avoid disclosing proprietary data; values are estimated.

<sup>3</sup>Includes materials for metallurgical uses and other applications.

<sup>4</sup>Includes cut wire shot and reclaimed shot and grit from primary producers.