

# Mineral Industry Surveys

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**For information, contact:**

Donald W. Olson, Abrasives Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-7721, Fax: (703) 648-7757  
E-mail: dolson@usgs.gov

Monica D. Zeigler (Data)  
Telephone: (703) 648-7981  
Fax: (703) 648-7975  
E-mail: mdzeigler@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## MANUFACTURED ABRASIVES IN THE FOURTH 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 fourth 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 were 244,000 t valued at \$125 million, or an average of \$512 per ton. About 88% of the imports came from China and 12% from Venezuela, Brazil, France, Canada, and Russia, 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 were 40,800 t valued at \$50.3 million, or an average of \$1,233 per ton.

U.S. exports of crude fused aluminum oxide for 2008 were 21,900 t. The exports were valued at \$59.0 million, or \$2,696 per ton. Canada received 37% of the exports that were shipped; Germany, 17%; Mexico, 14%; Japan, 9%; and others, 23%.

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 fourth quarter of 2008 was estimated to be 10,000 t, with an estimated value of \$7.4 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 were 87,300 t valued at \$72.9 million; imports from China alone were 82,300 t valued at \$67.5 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$1,079 per ton; the average price of Chinese crude was \$820 per ton. U.S. imports of refined and ground silicon carbide for the same period were 39,600 t valued at \$75.7 million, or an average of \$1,913 per ton. During 2008, China accounted for 94% of the crude material and 46% of the refined and ground material.

U.S. exports of crude silicon carbide for 2008 were reported to be 10,600 t with a value of \$24.7 million. Exports of refined and ground silicon carbide were 6,420 t valued at \$21.9 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, China, the United Kingdom, the Philippines, 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 fourth quarter of 2008, six companies produced 39,800 t of steel shot and grit, a 21% decrease compared with that of the same period in 2007. At least one of the companies produced shot and grit from reclaimed material. Total fourth quarter 2008 production was valued at \$18.2 million, or an average of \$458 per ton. Total production in 2008 was 210,000 t valued at \$98.1 million. Total production in 2007 was 201,000 t valued at \$87.9 million.

Shipments of steel shot and grit in the fourth quarter of 2008 were 39,700 t valued at \$18.4 million, or an average of \$462 per ton, compared with shipments during the fourth quarter of 2007, which were 53,900 t valued at \$25.2 million for an average of \$468 per ton.

During the fourth quarter, five companies produced 439 t of other types of metallic shot and grit (primarily cut wire shot) valued at \$1.58 million.

Imports of all types of metallic shot and grit for 2008 were 36,600 t valued at \$28.3 million for an average of \$772 per ton.

Sweden was the largest supplier, accounting for 45% of the tonnage imported.

Exports of all types of metallic abrasives for 2008 were 34,400 t valued at \$48.5 million, or an average of \$1,411 per ton. Shipments to China accounted for 33% of the exports; an additional 29% was shipped to Canada and 26% was shipped to Mexico.

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

(Metric tons and thousand dollars)

Source and product	2007				2008									
	Fourth quarter		Total		First quarter		Second quarter		Third quarter		Fourth quarter		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
United States and Canada, production: <sup>2</sup>														
Silicon carbide <sup>3</sup>	10,000	\$7,400	35,000	\$26,000	10,000	\$7,400	10,000	\$7,400	10,000	\$7,800	10,000	\$7,400	45,000	\$33,300
Crude aluminum oxide, regular-grade	5,000	800	10,000	1,700	5,000	800	5,000	800	5,000	800	5,000	800	10,000	1,700
United States, production:														
Steel shot and grit	50,200	23,000	201,000	87,900	70,800	32,800	53,300	25,000	46,500	22,100	39,800	18,200	210,000	98,100
Other shot and grit <sup>e, 4</sup>	413	1,810	2,180	9,350	500	2,030	503	2,270	465	1,830	439	1,580	1,910	7,710
Total	50,600	24,800	203,000	97,200	71,300	34,800	53,800	27,300	47,000	23,900	40,200	19,800	212,000	106,000
United States, shipments:														
Steel shot and grit	53,900	25,200	218,000	105,000	70,800	34,500	55,100	27,500	45,100	21,600	39,700	18,400	211,000	102,000
Other shot and grit <sup>e, 4</sup>	416	1,940	2,120	9,750	495	2,250	496	2,230	484	2,150	438	1,830	1,910	8,460
Total	54,300	27,200	220,000	115,000	71,300	36,800	55,600	29,700	45,500	23,800	40,200	20,200	213,000	110,000

<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>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.