

Mineral Industry Surveys

For information, contact:

Donald W. Olson, Abrasives Commodity Specialist
U.S. Geological Survey
983 National Center
Reston, VA 20192
Telephone: (703) 648-7721, Fax: (703) 648-7975
E-mail: dolson@usgs.gov

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

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

MANUFACTURED ABRASIVES IN THE THIRD QUARTER 2007

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 2007 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 2007 through the month of August were 128,000 t valued at \$41.8 million, or an average of \$325 per ton. About 88% of the imports came from China and 12% from Venezuela, Guyana, Canada, Russia, Germany, Hungary, Italy, France, and Austria, 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 2007 through the month of August were 29,300 t valued at \$32.4 million, or an average of \$1,107 per ton.

U.S. exports of fused aluminum oxide for 2007 through the month of August were 11,800 t. The exports were valued at \$31.4 million, or \$2,657 per ton. Canada received 29% of the exports that were shipped; Germany, 25%; Mexico, 13%; Japan, 8%; and others 25%.

The U.S. Department of Defense stores fused aluminum oxide in the National Defense Stockpile (NDS), but all of the NDS aluminum oxide has been authorized by law for disposal. During the third quarter of 2007, the Department of Defense held one sale of fused aluminum oxide abrasive grain. NDS reported that 3,230 t of fused aluminum oxide abrasive grain with a value of \$1.4 million was sold. This was all the fused

aluminum oxide abrasive grain that remained in the stockpile. The NDS had sold all of the crude fused aluminum oxide in the stockpile previously (Janet Rollins, Defense National Stockpile Center, oral commun., November 6, 2007). 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 during the third quarter of 2007 was estimated to be 10,000 t of abrasive-grade silicon carbide 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 2007 through the month of August were 75,900 t valued at \$39.6 million; imports from China alone were 65,500 t valued at \$34.7 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$477 per ton; the average price of Chinese crude was \$522 per ton. U.S. imports of refined and ground silicon carbide for the same period were 27,500 t valued at \$45.0 million, or an average of \$1,637 per ton. During the period, China accounted for 86% of the crude material and 38% of the refined and ground material.

U.S. exports of crude silicon carbide for 2007 through the month of August were reported to be 7,030 t with a value of \$12.0 million. Exports of refined and ground silicon carbide were 5,700 t valued at \$13.2 million. About 98% of the crude material was shipped to, in decreasing order of quantity, Norway, Mexico, and Japan. About 96% of the refined material went to, in decreasing order of quantity, Canada, Mexico, Japan, Germany, and the United Kingdom.

The NDS has sold all of the silicon carbide in the stockpile. No further stockpiling is anticipated.

Metallic Abrasives

Metallic abrasives information was collected from 12 companies operating 13 U.S. plants. During the third quarter of 2007, five companies produced 50,400 t of steel shot and grit, a 4% decrease compared with that of the same period in 2006. At

least one of the companies produced shot and grit from reclaimed material. Total third quarter 2007 production was valued at \$23.1 million, or an average of \$459 per ton. Total production in 2006 was 201,000 t valued at \$92.7 million; 2005 production was 207,000 t valued at \$94.4 million; 2004 production was 193,000 t valued at \$87.8 million; 2003 production was 192,000 t valued at \$86.2 million; and 2002 production was 201,000 t valued at \$91 million.

Shipments of steel shot and grit in the third quarter of 2007 were 53,700 t valued at \$26.4 million, or an average of \$491 per ton, compared with shipments during the third quarter of 2006, which were 56,900 t valued at \$27.8 million for an average of \$488 per ton.

During the third quarter, seven companies produced 416 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 2007 through the month of August were 15,100 t valued at \$11.6 million for an average of \$768 per ton. Canada was the largest supplier, accounting for 61% of the tonnage imported.

Exports of all types of metallic abrasives for 2007 through the month of August were 16,500 t valued at \$21.5 million, or an average of \$1,298 per ton. Shipments to Canada accounted for 37% of the exports; an additional 30% was shipped to Mexico.

TABLE 1
MANUFACTURED ABRASIVES¹

(Metric tons, unless otherwise specified)

Source and product	2007									
	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: ²										
Silicon carbide ³	10,000	\$7,400 ^r	10,000	\$7,400 ^r	10,000	\$7,600 ^r	10,000	\$7,400 ^r	10,000	\$7,400
Crude aluminum oxide, regular-grade	5,000	800 ^r	5,000	800 ^r	5,000	800 ^r	5,000	800 ^r	5,000	800
United States, production:										
Steel shot and grit	52,500	24,100	45,800	22,100	51,300	21,300	49,100	20,400	50,400	23,100
Other shot and grit ^{e,4}	713	2,880	624	2,600	688	2,870	667	2,830	416	1,830
Total	53,200	27,000	46,500	24,700	51,900	24,200	49,700	23,300	50,800	25,000
United States, shipments:										
Steel shot and grit	56,900	27,800	52,000	25,400	56,000	24,600	53,400	23,700	53,700	26,400
Other shot and grit ^{e,4}	680	2,890	579	2,470	619	2,750	652	3,000	435	2,050
Total	57,600	30,600	52,600	27,800	56,600	27,400	54,100	26,700	54,200	28,400

^eEstimated. ^rRevised.

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

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

³Includes materials for metallurgical uses and other applications.

⁴Includes cut wire shot and reclaimed shot and grit from primary producers.