

Mineral Industry Surveys

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MANUFACTURED ABRASIVES IN THE SECOND 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 second quarter of 2007 was estimated to be 5,000 metric tons (t) of regular-grade crude fused aluminum oxide with an estimated value of \$1.5 million. 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 May were 87,700 t valued at \$27.4 million, or an average of \$312 per ton. About 94% of the imports came from China and 6% from Venezuela, Canada, Russia, and Germany, 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 May were 17,000 t valued at \$18.5 million, or an average of \$1,086 per ton.

U.S. exports of fused aluminum oxide for 2007 through the month of May were 7,900 t. The exports were valued at \$20.1 million, or \$2,549 per ton. Canada received 31% of the exports that were shipped; Germany, 24%; Mexico, 11%; Japan, 10%; and others 24%.

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 second quarter of 2007, the Department of Defense did not hold any sales of fused aluminum oxide abrasive grain. NDS reported that 3,390 t of fused aluminum oxide abrasive grain with an estimated value of \$1.3 million remained in the stockpile. The NDS has sold all of the crude fused aluminum

oxide in the stockpile (Janet Rollins, Defense National Stockpile Center, oral commun., August 21, 2007). No further stockpiling of crude fused aluminum oxide by the Department of Defense is anticipated. If the current authorized disposal rate and NDS sales schedules are continued, all of the stockpiled fused aluminum oxide abrasive grain could be sold by the end of 2007.

Silicon Carbide

Abrasive-grade silicon carbide is produced by one company in the United States. The total production during the second quarter of 2007 was estimated to be 10,000 t of abrasive-grade silicon carbide with an estimated value of \$4.9 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 May were 44,200 t valued at \$24.8 million; imports from China alone were 41,100 t valued at \$22.1 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$863 per ton; the average price of Chinese crude was \$538 per ton. U.S. imports of refined and ground silicon carbide for the same period were 17,300 t valued at \$28.5 million, or an average of \$1,646 per ton. During the period, China accounted for 93% of the crude material and 35% of the refined and ground material.

U.S. exports of crude silicon carbide for 2007 through the month of May were reported to be 3,910 t with a value of \$6.51 million. Exports of refined and ground silicon carbide were 3,620 t valued at \$8.30 million. About 98% of the crude material was shipped to, in decreasing order of quantity, Norway, Mexico, and Japan. About 97% 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 second quarter of 2007, five companies produced 49,100 t of steel shot and grit,

an 8% increase compared with that of the same period in 2006. At least one of the companies produced shot and grit from reclaimed material. Total second quarter 2007 production was valued at \$20.4 million, or an average of \$416 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 second quarter of 2007 were 53,400 t valued at \$23.7 million, or an average of \$444 per ton, compared with shipments during the second quarter of 2006, which were 49,300 t valued at \$24.9 million for an average of \$505 per ton.

During the second quarter, seven companies produced 667 t of other types of metallic shot and grit (primarily cut wire shot) valued at \$2.83 million.

Imports of all types of metallic shot and grit for 2007 through the month of May were 9,180 t valued at \$7.08 million for an average of \$771 per ton. Canada was the largest supplier, accounting for 60% of the tonnage imported.

Exports of all types of metallic abrasives for 2007 through the month of May were 10,500 t valued at \$13.7 million, or an average of \$1,307 per ton. Shipments to Canada accounted for 35% of the exports; an additional 29% was shipped to Mexico.

TABLE 1
MANUFACTURED ABRASIVES¹

(Metric tons, unless otherwise specified)

Source and product	2006						2007			
	Second quarter		Third quarter		Fourth quarter		First quarter		Second 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	\$4,900	10,000	\$4,900	10,000	\$4,900	10,000	\$4,900	10,000	\$4,900
Crude aluminum oxide, regular-grade	5,000	1,500	5,000	1,500	5,000	1,500	5,000	1,500	5,000	1,500
United States, production:										
Steel shot and grit	45,600	21,500	52,500	24,100	45,800	22,100	51,300	21,300	49,100	20,400
Other shot and grit ^{e,4}	611	2,310	713	2,880	624	2,600	688	2,870	667	2,830
Total	46,200	23,800	53,200	27,000	46,500	24,700	51,900	24,200	49,700	23,300
United States, shipments:										
Steel shot and grit	49,300	24,900	56,900	27,800	52,000	25,400	56,000	24,600	53,400	23,700
Other shot and grit ^{e,4}	647	2,610	680	2,890	579	2,470	619	2,750	652	3,000
Total	49,900	27,500	57,600	30,600	52,600	27,800	56,600	27,400	54,000	26,700

^eEstimated.

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.