

Mineral Industry Surveys

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 SECOND QUARTER 2009

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 2009 was estimated to be 5,000 metric tons (t) of regular-grade crude fused aluminum oxide with an estimated value of \$800,000. One company, operating one plant in Canada and one 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 during the second quarter of 2009 were 2,040 t valued at \$1.54 million, or an average of \$753 per ton. About 99% of the imports came from Canada.

U.S. imports of refined and ground fused aluminum oxide for the second quarter of 2009 were 4,170 t valued at \$4.94 million, or an average of \$1,190 per ton.

U.S. exports of crude fused aluminum oxide for the second quarter of 2009 were 2,220 t. The exports were valued at \$5.68 million, or \$2,560 per ton. Canada received 40% of the exports that were shipped; Mexico, 19%; Japan, 12%; Germany, 10%; and others, 19%.

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 second quarter of 2009 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 during the second quarter of 2009 were 10,600 t valued at \$7.27 million; imports from China alone were 8,770 t valued at \$5.95 million. The average price of imported crude silicon carbide, excluding

Chinese crude, was \$728 per ton; the average price of Chinese crude was \$679 per ton. U.S. imports of refined and ground silicon carbide for the same period were 3,220 t valued at \$7.41 million, or an average of \$2,300 per ton. During the second quarter of 2009, China accounted for 83% of the crude material and 43% of the refined and ground material imported.

U.S. exports of crude silicon carbide during the second quarter of 2009 were reported to be 3,100 t with a value of \$5.96 million. Exports of refined and ground silicon carbide were 855 t valued at \$1.85 million. About 99% of the crude material was shipped to, in decreasing order of quantity, Norway, Mexico, and China. About 90% of the refined material was shipped to, in decreasing order of quantity, Canada, Mexico, Germany, Norway, and Japan.

Metallic Abrasives

Metallic abrasives information was collected from 12 companies operating 13 U.S. plants. During the second quarter of 2009, five companies produced 31,400 t of steel shot and grit, a 41% decrease compared with that of the same period in 2008. At least one of the companies produced shot and grit from reclaimed material. Total second quarter 2009 production was valued at \$14.7 million, or an average of \$468 per ton.

Shipments of steel shot and grit in the second quarter of 2009 were 34,700 t valued at \$19.1 million, or an average of \$549 per ton, compared with shipments during the second quarter of 2008, which were 55,100 t valued at \$27.5 million for an average of \$499 per ton.

During the second quarter, five companies produced 305 t of other types of metallic shot and grit (primarily cut wire shot) valued at \$1.04 million.

Imports of all types of metallic shot and grit during the second quarter of 2009 were 3,230 t valued at \$3.06 million for an average of \$949 per ton. Canada was the largest supplier, accounting for 40% of the tonnage imported.

Exports of all types of metallic abrasives during the second quarter of 2009 were 5,630 t valued at \$6.07 million, or an average of \$1,080 per ton. Shipments to China accounted for 32% of the exports; an additional 30% was shipped to Mexico and 26% was shipped to Canada.

TABLE 1
MANUFACTURED ABRASIVES¹

(Metric tons, unless otherwise specified)

Source and product	2008						2009			
	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	\$7,400	10,000	\$7,800	10,000	\$7,400	10,000	\$7,400	10,000	\$7,400
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	53,300	25,000	46,500	22,100	39,800	18,200	40,300	18,300	31,400	14,700
Other shot and grit ^{e, 4}	503	2,270	465	1,830	439	1,580	381	1,460	305	1,040
Total	53,800	27,300	47,000	23,900	40,200	19,800	40,700	19,800	31,700	15,700
United States, shipments:										
Steel shot and grit	55,100	27,500	45,100	21,600	39,700	18,400	37,300	17,000	34,700	19,100
Other shot and grit ^{e, 4}	496	2,230	484	2,150	438	1,830	392	1,510	307	1,050
Total	55,600	29,700	45,500	23,800	40,200	20,200	37,700	18,500	35,000	20,100

^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.

TABLE 2
U.S. EXPORTS AND IMPORTS FOR CONSUMPTION OF ALUMINUM OXIDE, SILICON CARBIDE, AND METALLIC ABRASIVES¹

	2008						2009			
	Second quarter		Third quarter		Fourth quarter		First quarter		Second quarter	
	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)	Quantity (metric tons)	Value ² (thousands)
Exports:										
Aluminum oxide:										
Crude	6,370	\$17,500	6,090	\$15,300	3,860	\$11,000	3,400	\$8,580	2,220	\$5,680
Ground and refined	298,000	171,000	283,000	160,000	222,000	125,000	184,000	86,500	229,000	90,500
Silicon carbide:										
Crude	2,180	5,480	2,790	5,680	3,530	7,480	3,520	5,960	3,100	5,960
Ground and refined	1,780	6,520	1,470	4,970	1,370	5,040	923	3,500	855	1,850
Metallic abrasives	8,290	12,900	6,950	11,000	6,680	8,920	4,470	5,850	5,630	6,070
Imports for consumption:										
Aluminum oxide:										
Crude	90,500	39,500	59,000	37,100	29,800	18,300	7,340	5,010	2,040	1,540
Ground and refined	11,900	13,600	9,970	12,800	10,700	12,800	7,810	9,040	4,170	4,940
Silicon carbide:										
Crude	28,600	20,300	21,000	19,400	21,500	21,600	11,300	7,820	10,600	7,270
Ground and refined	11,700	20,400	9,220	20,000	7,570	18,100	4,490	11,900	3,220	7,410
Metallic abrasives	13,100	8,410	12,800	10,100	5,910	5,450	2,770	1,980	3,230	3,060

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

²Customs value.

Source: U.S. Census Bureau.