

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

Shonta E. Osborne (Data)
Telephone: (703) 648-7960
Fax: (703) 648-7975
E-mail: sosborne@usgs.gov

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

MANUFACTURED ABRASIVES IN THE SECOND QUARTER 2013

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 2013 was estimated to be 5,000 metric tons (t) of regular-grade crude fused aluminum oxide with an estimated value of \$800,000, which was essentially unchanged in quantity and value from that of both the second quarter of 2012 and first quarter of 2013. One company, operating one plant in Canada and one in the United States, produced fused aluminum oxide. These production figures have 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 2013 were 22,900 t valued at \$15.2 million, or an average of \$661 per ton. About 62% of the imports came from China, 29% from Venezuela, and 9% from other countries.

U.S. imports of ground and refined fused aluminum oxide for the second quarter of 2013 were 26,400 t valued at \$21.5 million, or an average of \$815 per ton.

U.S. exports of crude fused aluminum oxide for the second quarter of 2013 were 6,890 t. These exports were valued at \$16.8 million, or \$2,440 per ton. China received 28% of the exports that were shipped; Canada, 23%; Mexico, 18%; Germany, 9%; and others, 22%. U.S. exports of ground fused aluminum oxide for the second quarter of 2013 were 527,000 t valued at \$207 million, or \$392 per ton. Canada received 44% of the exports that were shipped; Egypt, 20%; Iceland, 12%; Norway, 9%; and others, 15%.

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 2013 was estimated to be 10,000 t, with an estimated value of \$7.4 million, which was essentially unchanged in quantity and value from that of both the second quarter of 2012 and first quarter of 2013. These production figures have 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 2013 were 22,400 t valued at \$17.3 million; imports from China alone were 14,700 t valued at \$11.1 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$809 per ton; the average price of Chinese crude was \$756 per ton. U.S. imports of ground and refined silicon carbide for the same period were 8,430 t valued at \$16.9 million, or an average of \$2,000 per ton. During the second quarter of 2013, China accounted for 66% of the crude material and 39% of the ground and refined material imported.

U.S. exports of crude silicon carbide during the second quarter of 2013 were reported to be 2,640 t with a value of \$3.20 million. Second quarter exports of ground and refined silicon carbide were 1,410 t valued at \$4.35 million. About 99% of the crude material was shipped to, in decreasing order of quantity, Norway, Mexico, and the Republic of Korea. About 92% of the refined material was shipped to, in decreasing order of quantity, Mexico, Canada, Germany, Colombia, Japan, Thailand, and Belgium.

Metallic Abrasives

Metallic abrasives information was collected from 10 companies operating 11 U.S. plants. During the second quarter of 2013, five companies produced 46,400 t of steel shot and grit, a 5% decrease compared with that of the same period in 2012. At least one of the companies produced shot and grit from reclaimed material. Total second quarter 2013 production was valued at \$22.5 million, or an average of \$484

per ton. Total production in 2012 was 190,000 t valued at \$92.9 million.

Shipments of steel shot and grit in the second quarter of 2013 were 50,000 t valued at \$28.7 million, or an average of \$579 per ton, compared with shipments during the second quarter of 2012, which were 53,300 t valued at \$30.7 million for an average of \$575 per ton.

During the second quarter of 2013, five companies produced 591 t of other types of metallic shot and grit (primarily cut wire shot) valued at \$2.16 million.

Imports of all types of metallic shot and grit during the second quarter of 2013 were 5,880 t valued at \$5.95 million for an average of \$1,010 per ton, compared with imports

during the second quarter of 2012, which were 17,700 t valued at \$5.74 million for an average of \$325 per ton. Canada, Germany, China, the Republic of Korea, and Japan were the leading suppliers, accounting for 38%, 13%, 13%, 12%, and 9% of the tonnage imported, respectively.

Exports of all types of metallic abrasives during the second quarter of 2013 were 8,730 t valued at \$12.4 million, or an average of \$1,420 per ton, compared with exports during the second quarter of 2012, which were 9,000 t valued at \$12.2 million, or an average of \$1,360 per ton. Shipments to Mexico accounted for 42% of the exports; an additional 22% was shipped to Canada, and 21% was shipped to China.

TABLE 1
MANUFACTURED ABRASIVES¹

Source and product	2012								2013			
	2d quarter		3d quarter		4th quarter		1st quarter–4th quarter		1st quarter		2d quarter	
	Quantity (metric tons)	Value (thousands)										
United States and Canada, production: ^{e, 2}												
Crude aluminum oxide, regular-grade	5,000	\$800	5,000	\$800	5,000	\$800	10,000	\$1,700	5,000	\$800	5,000	\$800
Silicon carbide ³	10,000	7,400	10,000	7,400	10,000	7,400	35,000	25,900	10,000	7,400	10,000	7,400
United States, production:												
Steel shot and grit	48,700	23,700	48,700	23,700	48,500	23,500	190,000	92,900	47,200 ^r	23,200 ^r	46,400	22,500
Other shot and grit ^{e, 4}	481	1,780	446	1,590	498	1,920	2,180	7,110	534	2,090	591	2,160
Total	49,100	25,500	49,100	25,300	49,000	25,400	193,000	100,000	47,700 ^r	25,300 ^r	47,000	24,600
United States, shipments:												
Steel shot and grit	53,300	30,700	53,300	30,700	53,100	30,400	208,000	120,000	51,300 ^r	29,500 ^r	49,600	28,700
Other shot and grit ^{e, 4}	512	2,230	530	2,250	488	2,100	2,290	8,770	515	2,310	585	2,500
Total	53,800	32,900	53,900	32,900	53,600	32,500	211,000	129,000	51,800 ^r	31,800 ^r	50,100	31,200

^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.

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

Source and product	2012								2013			
	2d quarter		3d quarter		4th quarter		1st quarter–4th quarter		1st quarter		2d quarter	
	Quantity (metric tons)	Value ² (thousands)										
Exports:												
Aluminum oxide:												
Crude	5,200	\$16,700	4,780	\$15,900	4,720	\$15,700	19,100	\$64,200	4,850	\$17,400	6,890	\$16,800
Ground and refined	325,000	171,000	450,000	190,000	473,000	210,000	1,680,000	756,000	460,000	198,000	527,000	207,000
Silicon carbide:												
Crude	2,690	4,320	4,750	6,140	3,810	5,370	14,800	20,600	3,480	4,140	2,640	3,200
Ground and refined	1,340	5,700	1,120	4,180	1,300	4,270	5,240	19,800	1,350	4,640	1,410	4,350
Metallic abrasives	8,960	12,200	9,840	13,200	9,550	14,800	39,000	53,400	9,270	13,000	8,730	12,400
Imports for consumption:												
Aluminum oxide:												
Crude	28,300	12,700	62,200	36,600	44,600	24,300	161,000	90,200	47,800	30,300	22,900	15,200
Ground and refined	11,600	21,000	23,100	18,500	24,100	18,800	70,000	75,900	37,300	25,200	26,400	21,500
Silicon carbide:												
Crude	9,230	17,600	21,900	16,500	3,180	2,900	62,200	62,000	17,800	11,900	22,400	17,300
Ground and refined	5,650	19,300	7,800	16,900	4,120	11,400	25,900	63,900	5,490	12,100	8,430	16,900
Metallic abrasives	17,700	5,740	5,360	5,070	5,300	5,450	34,000	21,700	5,510	5,640	5,880	5,950

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

²Customs value.

Source: U.S. Census Bureau.