

ABRASIVES (MANUFACTURED)

Events, Trends, and Issues: Imports and higher operating costs continued to challenge abrasives producers in the United States and Canada. Foreign competition, particularly from China, is expected to persist and further curtail production in North America. Abrasives markets are greatly influenced by activity in the manufacturing sector in the United States. During 2009, downturns in the U.S. manufacturing sector, owing to the impacts of the global economic recession, caused modest decreases in U.S. manufactured abrasives production, but significant decreases in consumption. This was particularly true of manufacturing activities in the aerospace, automotive, furniture, housing, and steel industries. The U.S. abrasive markets also are influenced by economic and technological trends. As the world and the United States slowly began to recover from the global economic recession during 2010, U.S. manufactured abrasives production and consumption also slowly began to show signs of improvement. After large drops in the imports of aluminum oxide and silicon carbide in 2009, imports began to increase during 2010. Global prices of abrasive aluminum oxide and silicon carbide, which had leveled out or dropped during the first three quarters of 2009, began moving steadily higher in the last quarter of 2009. This price trend continued through 2010.

World Production Capacity:

| | Fused aluminum oxide | | Silicon carbide | |
|--------------------------|-----------------------------|--------------------|------------------------|--------------------|
| | <u>2009</u> | <u>2010</u> | <u>2009</u> | <u>2010</u> |
| United States and Canada | 60,400 | 60,400 | 42,600 | 42,600 |
| Argentina | — | — | 5,000 | 5,000 |
| Australia | 50,000 | 50,000 | — | — |
| Austria | 60,000 | 60,000 | — | — |
| Brazil | 50,000 | 50,000 | 43,000 | 43,000 |
| China | 700,000 | 700,000 | 455,000 | 455,000 |
| France | 40,000 | 40,000 | 16,000 | 16,000 |
| Germany | 80,000 | 80,000 | 36,000 | 36,000 |
| India | 40,000 | 40,000 | 5,000 | 5,000 |
| Japan | 25,000 | 25,000 | 60,000 | 60,000 |
| Mexico | — | — | 45,000 | 45,000 |
| Norway | — | — | 80,000 | 80,000 |
| Venezuela | — | — | 30,000 | 30,000 |
| Other countries | <u>80,000</u> | <u>80,000</u> | <u>190,000</u> | <u>190,000</u> |
| World total (rounded) | <u>1,190,000</u> | <u>1,190,000</u> | <u>1,010,000</u> | <u>1,010,000</u> |

World Resources: Although domestic resources of raw materials for the production of fused aluminum oxide are rather limited, adequate resources are available in the Western Hemisphere. Domestic resources are more than adequate for the production of silicon carbide.

Substitutes: Natural and manufactured abrasives, such as garnet, emery, or metallic abrasives, can be substituted for fused aluminum oxide and silicon carbide in various applications.

^eEstimated. NA Not available. — Zero.

¹Rounded to the nearest 5,000 tons to protect proprietary data.

²Defined as imports – exports + adjustments for Government and industry stock changes.