

## SAND AND GRAVEL (INDUSTRIAL)

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** Industrial sand and gravel valued at about \$700 million was produced by 69 companies from 153 operations in 35 States. Leading States, in order of tonnage, were Illinois, Texas, Wisconsin, New Jersey, California, Michigan, North Carolina, and Oklahoma. Combined production from these States represented 61% of the domestic total. About 35% of the U.S. tonnage was used as glassmaking sand, 19% as foundry sand, 12% as hydraulic fracturing sand, 10% as building products, 3% as abrasive sand, and 21% was for other uses.

<b><u>Salient Statistics—United States:</u></b>	<b><u>2001</u></b>	<b><u>2002</u></b>	<b><u>2003</u></b>	<b><u>2004</u></b>	<b><u>2005<sup>e</sup></u></b>
Production	27,900	27,300	27,500	29,700	31,300
Imports for consumption	172	250	440	490	717
Exports	1,540	1,410	2,620	1,790	2,460
Consumption, apparent	26,500	26,100	25,300	28,400	29,600
Price, average value, dollars per ton	20.64	20.98	22.14	23.06	22.50
Stocks, yearend	NA	NA	NA	NA	NA
Employment, quarry and mill, number <sup>e</sup>	1,400	1,400	1,400	1,400	1,400
Net import reliance <sup>f</sup> as a percentage of apparent consumption	E	E	E	E	E

**Recycling:** There is some recycling of foundry sand, and recycled cullet (pieces of glass) represents a significant proportion of reused silica.

**Import Sources (2001-04):** Mexico, 59%; Canada, 35%; and other, 6%.

<b><u>Tariff: Item</u></b>	<b><u>Number</u></b>	<b><u>Normal Trade Relations</u></b>
		<b><u>12-31-05</u></b>
95% or more silica and not more than 0.6% iron oxide	2505.10.1000	Free.

**Depletion Allowance:** Industrial sand or pebbles, 14% (Domestic and foreign).

**Government Stockpile:** None.

**Events, Trends, and Issues:** Domestic sales of industrial sand and gravel in 2005 increased by about 3% compared with those of 2004, owing to a robust construction sector of the U.S. economy. U.S. apparent consumption was 29.6 million tons in 2005, a 4% increase from than the previous year. Imports of industrial sand and gravel in 2005 increased by about 46% compared with those of 2004. Mexico's share of imports increased, and Canada's share decreased. Imports of silica are generally of two types: small shipments of very high-purity silica or a few large shipments of lower grade silica shipped only under special circumstances (for example, very low freight rates). Exports of industrial sand and gravel in 2005 increased by about 37% compared with those of 2004.

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The United States was the world's leading producer and consumer of industrial sand and gravel based on estimated world production figures. It was difficult to collect definitive numbers on silica sand and gravel production in most nations because of the wide range of terminology and specifications from country to country. The United States remained a major exporter of silica sand and gravel, shipping it to almost every region of the world. This was attributed to the high quality and advanced processing techniques for a large variety of grades of silica sand and gravel, meeting virtually every specification.

The industrial sand and gravel industry continued to be concerned with safety and health regulations and environmental restrictions in 2005. Local shortages were expected to continue to increase owing to local zoning regulations and land development alternatives. These situations are expected to cause future sand and gravel operations to be located farther from high-population centers.

### **World Mine Production, Reserves, and Reserve Base:**

	Mine production <sup>e</sup>		Reserves and reserve base <sup>2</sup>
	2004	2005	
United States	29,700	31,300	Large. Industrial sand and gravel deposits are widespread. Calculation of the reserves and reserve base is determined mainly by the location of population centers.
Australia	4,500	4,500	
Austria	6,800	6,800	
Belgium	1,800	1,800	
Brazil	1,600	1,600	
Canada	1,600	1,600	
France	6,500	6,500	
Gambia	1,500	1,500	
Germany	7,500	7,500	
India	1,500	1,500	
Iran	1,700	1,700	
Italy	3,000	3,000	
Japan	4,500	4,500	
Mexico	2,000	2,000	
Norway	1,500	1,500	
Poland	1,500	1,500	
Romania	1,100	1,100	
Slovakia	2,200	2,200	
Slovenia	11,000	11,000	
South Africa	2,400	2,400	
Spain	6,500	6,500	
Thailand	1,300	1,300	
Turkey	1,300	1,300	
United Kingdom	4,500	4,500	
Other countries	<u>7,900</u>	<u>7,900</u>	
World total (rounded)	115,000	117,000	

**World Resources:** Sand and gravel resources of the world are large. However, because of their geographic distribution, environmental restrictions, and quality requirements for some uses, extraction of these resources is sometimes uneconomic. Quartz-rich sand and sandstones, the main sources of industrial silica sand, occur throughout the world.

**Substitutes:** Alternative materials that can be used for glassmaking and for foundry and molding sands are chromite, olivine, staurolite, and zircon sands.

<sup>e</sup>Estimated. E Net exporter. NA Not available.

<sup>1</sup>Defined as imports – exports + adjustments for Government and industry stock changes.

<sup>2</sup>[See Appendix C for definitions.](#)