

## SAND AND GRAVEL (INDUSTRIAL)

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** Industrial sand and gravel valued at about \$646 million was produced by 65 companies from 153 operations in 35 States. Leading States, in order of tonnage, were Illinois, Texas, Michigan, Wisconsin, North Carolina, California, New Jersey, and Oklahoma. Combined production from these States represented 61% of the domestic total. About 39% of the U.S. tonnage was used as glassmaking sand, 19% as foundry sand, 10% as building products, 8% as hydraulic fracturing sand, 3% as abrasive sand, and 21% was for other uses.

<b><u>Salient Statistics—United States:</u></b>	<b><u>2000</u></b>	<b><u>2001</u></b>	<b><u>2002</u></b>	<b><u>2003</u></b>	<b><u>2004<sup>e</sup></u></b>
Production	28,400	27,900	27,300	27,500	29,000
Imports for consumption	247	172	250	440	485
Exports	1,660	1,540	1,410	2,620	2,600
Consumption, apparent	27,400	26,500	26,100	25,300	26,900
Price, average value, dollars per ton	19.58	20.64	20.98	22.14	22.28
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>1</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 (2000-03):** Canada, 52%; Mexico, 37%, and other, 11%.

<b><u>Tariff: Item</u></b>	<b><u>Number</u></b>	<b><u>Normal Trade Relations</u></b> <b><u>12-31-04</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.

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**Events, Trends, and Issues:** Domestic sales of industrial sand and gravel in 2004 increased by about 6% compared with those of 2003, owing to a robust construction sector of the U.S. economy. U.S. apparent consumption was 26.9 million tons in 2004, a 6% increase during the previous year. Imports of industrial sand and gravel in 2004 increased slightly from those of 2003. Mexico's share of imports decreased, and Canada's share increased. 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 (e.g., very low freight rates).

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, environmental restrictions, and in some cases, litigation in 2004. 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>
	2003	2004 <sup>e</sup>	
United States	27,500	29,000	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	5,000	
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	
Germany	8,500	8,500	
India	1,500	1,500	
Iran	1,700	1,700	
Italy	3,000	3,000	
Japan	4,700	4,800	
Mexico	1,700	1,700	
Norway	1,500	1,600	
Poland	1,500	1,500	
South Africa	2,500	2,240	
Spain	6,500	6,500	
Turkey	1,300	1,300	
United Kingdom	4,500	4,000	
Other countries	21,000	20,000	
World total (rounded)	110,000	111,000	

**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 source 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.