## SAND AND GRAVEL (INDUSTRIAL)

(Data in thousand metric tons, unless otherwise noted)

<u>Domestic Production and Use</u>: Industrial sand and gravel valued at about \$566 million was produced by 70 companies from 160 operations in 36 States. Leading States, in order of tonnage, were Illinois, Michigan, California, Texas, North Carolina, Wisconsin, New Jersey, and Oklahoma. Combined production from these States represented 61% of the domestic total. About 37% of the U.S. tonnage was used as glassmaking sand, 21% as foundry sand, 6% as hydraulic fracturing sand, 5% as abrasive sand, and 31% was for other uses.

Salient Statistics—United States:	<u> 1998</u>	<u> 1999</u>	2000	<u>2001</u>	2002 <sup>e</sup>
Production	28,200	28,900	28,400	27,900	28,000
Imports for consumption	44	211	247	172	170
Exports	2,400	1,670	1,660	1,540	1,540
Consumption, apparent	26,200	27,400	27,400	26,500	26,600
Price, average value, dollars per ton	18.19	18.64	19.58	20.64	20.20
Stocks, yearend	NA	NA	NA	NA	NA
Employment, quarry and mill, numbere	1,400	1,400	1,400	1,400	1,400
Net import reliance <sup>1</sup> as a percentage					
of apparent consumption	Е	Е	Е	Е	Е

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

Import Sources (1998-2001): Canada, 87%; Trinidad and Tobago, 5%; China, 3%; and other, 5%.

Tariff: Item Number Normal Trade Relations

12/31/02

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 2002 decreased by about 2% compared with those of 2001. U.S. apparent consumption was 26.6 million tons in 2002, increasing slightly over the previous year. Imports remained about the same as those of 2001. Imports of silica are generally of two types: small-quantity shipments of very-high-purity silica or a few large shipments of lower grade silica that were shipped only under special circumstances (e.g., very low freight rates).

The United States was the world's largest 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 for silica from country to country. The United States remained a major exporter of silica sand, shipping sand 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, meeting virtually every specification for silica sand and gravel.

Domestic production and apparent consumption is estimated to be about 28 million tons and 27 million tons, respectively, in 2003.

The industrial sand and gravel industry continued to be concerned with safety and health regulations and environmental restrictions in 2002. 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	Reserv	<u>'e Base</u> :
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	Mine pro	oductione	Reserves and reserve base <sup>2</sup>		
	<u>2001</u>	<u>2002</u>			
United States	27,900	28,000			
Australia	2,500	2,500	Large. Silica is abundant in the Earth's		
Austria	5,800	5,800	crust. The reserves and reserve base		
Belgium	2,400	2,400	are determined mainly by the location of		
Brazil	2,700	2,700	population centers.		
Canada	2,000	2,000			
France	6,600	6,600			
Germany	6,800	6,800			
India	1,400	1,400			
Italy	3,000	3,000			
Japan	2,500	2,500			
Mexico	1,700	1,800			
Netherlands	3,000	3,000			
South Africa	2,100	2,100			
Spain	6,000	6,000			
United Kingdom	4,000	4,000			
Other countries	<u>15,000</u>	<u>15,000</u>			
World total (rounded)	95,000	96,000			

<u>World Resources</u>: Sand and gravel resources of the world are sizable. 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.

<u>Substitutes</u>: Silica sand continues to be the major material used for glassmaking and for foundry and molding sands; alternatives are zircon, olivine, staurolite, and chromite sands.

eEstimated. E Net exporter. NA Not available.

<sup>&</sup>lt;sup>1</sup>Defined as imports - exports + adjustments for Government and industry stock changes.

<sup>&</sup>lt;sup>2</sup>See Appendix C for definitions.