

SAND AND GRAVEL (INDUSTRIAL)

(Data in thousand metric tons, unless otherwise noted)

Domestic Production and Use: Industrial sand and gravel valued at about \$566 million was produced by 67 companies from 157 operations in 34 States. Leading States, in order of tonnage, were Illinois, Michigan, California, North Carolina, Texas, Wisconsin, New Jersey, and Oklahoma. Combined production from these States represented 59% of the domestic total. About 38% of the U.S. tonnage was used as glassmaking sand, 20% as foundry sand, 5% as hydraulic fracturing sand, 5% as abrasive sand, and 32% was for other uses.

Salient Statistics—United States:	1999	2000	2001	2002	2003^e
Production	28,900	28,400	27,900	27,300	28,300
Imports for consumption	211	247	172	250	250
Exports	1,670	1,660	1,540	1,410	1,400
Consumption, apparent	27,400	27,400	26,500	26,100	27,200
Price, average value, dollars per ton	18.64	19.58	20.64	20.98	20.01
Stocks, yearend	NA	NA	NA	NA	NA
Employment, quarry and mill, number ^e	1,400	1,400	1,400	1,400	1,400
Net import reliance ¹ 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 (1999-2002): Canada, 48%; Mexico, 47%; and other, 5%.

Tariff: Item	Number	Normal Trade Relations 12/31/03
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 2003 increased by almost 4% compared with those of 2002. U.S. apparent consumption was 27.2 million tons in 2003, an increase over the previous year. Imports of industrial sand and gravel in 2003 remained at about the same level as 2002. Mexico's share of imports increased dramatically, and Canada's share increased as well. 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 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.

Domestic production and apparent consumption is estimated to be about 28.3 million tons and 27.2 million tons, respectively, in 2003.

The industrial sand and gravel industry continued to be concerned with safety and health regulations and environmental restrictions in 2003. 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 ^e		Reserves and reserve base ²
	2002	2003	
United States	27,300	28,300	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	5,500	
Germany	8,500	8,500	
India	1,400	1,450	
Iran	1,700	1,700	
Italy	3,000	3,000	
Japan	2,200	1,900	
Mexico	1,700	1,800	
Norway	1,400	1,400	
South Africa	2,300	2,300	
Spain	6,500	6,500	
Turkey	1,400	1,300	
United Kingdom	4,500	4,000	
Other countries	<u>10,300</u>	<u>10,300</u>	
World total (rounded)	<u>95,000</u>	<u>94,000</u>	

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

^eEstimated. E Net exporter. NA Not available.

¹Defined as imports – exports + adjustments for Government and industry stock changes.

²See Appendix C for definitions.