

SAND AND GRAVEL (INDUSTRIAL)¹

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: Industrial sand and gravel valued at about \$883 million was produced by 68 companies from 138 operations in 34 States. Leading States, in order of tonnage produced, were Illinois, Florida, Georgia, Wisconsin, Texas, California, Oklahoma, and Minnesota. Combined production from these States represented 61% of the domestic total. About 33% of the U.S. tonnage was used as glassmaking sand, 16% as foundry sand, 15% as hydraulic fracturing sand and well-packing and cementing sand, 11% as ground silica and whole-grain silica, 10% as building products, and 15% for other uses.

Salient Statistics—United States:	2003	2004	2005	2006	2007^e
Production	27,500	29,700	30,600	31,700	35,000
Imports for consumption	440	490	711	855	580
Exports	2,620	1,790	2,910	3,830	3,800
Consumption, apparent	25,300	28,400	28,400	28,700	31,800
Price, average value, dollars per ton	22.14	23.06	24.57	25.46	25.28
Employment, quarry and mill, number ^e	1,400	1,400	1,400	1,400	1,400
Net import reliance ² 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 (2003-06): Mexico, 53%; Canada, 41%; and other, 6%.

Tariff: Item	Number	Normal Trade Relations 12-31-07
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 2007 increased by about 10% compared with those of 2006, owing to increasing demand for many uses, which included ceramics, chemicals, fillers (ground and whole-grain), filtration, container, flat and specialty glass, hydraulic fracturing, and recreational uses. U.S. apparent consumption was 31.8 million tons in 2007, an 11% increase from that of the previous year. Imports of industrial sand and gravel in 2007 decreased by about 32% compared with those of 2006. 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 2007 remained essentially unchanged compared with those of 2006.

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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 data 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. The high level of exports was attributed to the high quality and advanced processing techniques in the United States 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 2007. 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 ³
	2006	2007	
United States	31,700	35,000	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	3,700	3,700	
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	1,390	1,400	
Germany	7,700	7,700	
India	1,600	1,600	
Iran	1,900	1,900	
Italy	3,000	3,000	
Japan	4,600	4,600	
Mexico	2,630	2,600	
Norway	1,500	1,500	
Poland	1,500	1,500	
Romania	1,500	1,500	
Slovakia	2,000	2,000	
Slovenia	10,000	10,000	
South Africa	3,216	3,200	
Spain	5,100	5,100	
Turkey	1,200	1,200	
United Kingdom	5,000	5,000	
Other countries	<u>10,600</u>	<u>11,000</u>	
World total (rounded)	118,000	120,000	

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.

^eEstimated. E Net exporter.

¹See also Sand and Gravel (Construction).

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

³[See Appendix C for definitions.](#)