

DIAMOND (INDUSTRIAL)

(Data in million carats, unless otherwise noted)

Domestic Production and Use: Production reached a record high and the United States remained the world's largest consumer of industrial diamond in 1997. Virtually all output was synthetic grit and powder. Two firms, one in New Jersey and the other in Ohio, accounted for the production. Three firms recovered used industrial diamond as one of their principal operations. Most consumption was accounted for by the following industry sectors: machinery manufacturing, mineral services, stone and ceramic production, abrasive industries, construction, and transportation equipment manufacturing. Mineral services, primarily drilling, accounted for most industrial stone consumption.

Salient Statistics—United States:¹	1993	1994	1995	1996	1997^e
Bort, grit, and powder and dust; natural and synthetic:					
Production: Manufactured diamond	105	104	115	114	125
Secondary	15.9	16.0	26.1	20	10
Imports for consumption	133	174	188	218	243
Exports and reexports	107	153	101	108	135
Sales from Government stockpile excesses	—	2.0	.2	1	.7
Consumption, apparent	146	141	228	245	244
Price, value of imports, dollars per carat	.61	.51	.43	.46	.44
Net import reliance ² as a percent of apparent consumption	18	15	38	45	45
Stones, natural:					
Production: Mine	—	—	—	(3)	(3)
Secondary	.1	.1	.3	.3	.3
Imports for consumption ⁴	5.2	2.8	4.1	2.9	2.4
Exports and reexports ⁵	3.4	4.4	5.2	3.3	3.8
Sales from Government stockpile excesses	1.3	3.1	.3	.5	.9
Consumption, apparent	NA	NA	NA	NA	NA
Price, value of imports, dollars per carat	6.85	9.41	6.62	7.54	10.06
Net import reliance ² as a percent of apparent consumption	NA	NA	NA	NA	NA

Recycling: Lower prices appear to be reducing the number and scale of recycling operations.

Import Sources (1993-96): Bort, grit, and powder and dust; natural and synthetic: Ireland, 58%; China, 9%; Germany, 8%; and other, 25%. Stone, primarily natural: the United Kingdom, 37%; Congo (Kinshasa), 17%; Belgium, 16%; and other, 30%.

Tariff: Item	Number	Most favored nation (MFN) 12/31/97	Non-MFN⁶ 12/31/97
Miners' diamond, carbonados	7102.21.1010	Free	Free.
Other	7102.21.1020	Free	Free.
Industrial diamond, natural advanced	7102.21.3000	2.0% ad val.	30% ad val.
Industrial diamond, natural not advanced	7102.21.4000	Free	Free.
Industrial diamond, other	7102.29.0000	Free	Free.
Dust, grit, or powder	7105.10.0000	Free	Free.

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Depletion Allowance: 14% (Domestic), 14% (Foreign).

Government Stockpile:

Stockpile Status—9-30-97⁷

Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 1997	Disposals FY 1997
Crushing bort	0.0620	0.085	0.0008	1.0	0.723
Industrial stones	3.75	.462	.653	2.0	.877

Events, Trends, and Issues: The United States will continue to be the largest market for industrial diamond through the remainder of this decade. A new diamond mine in Colorado, the first in the United States in almost a century, could become a domestic source of natural industrial stones.

World and U.S. demand for diamond grit and powder will experience growth through the next 5 years. Increases in demand for synthetic grit and powder are expected to be greater than for natural diamond material. Constant-dollar prices of synthetic diamond products probably will continue to decline as production technology becomes more cost-effective; the decline is even more likely if competition from low-cost producers in China and Russia increases.

World Mine Production, Reserves, and Reserve Base:⁸

	Mine production		Reserves ^{e 9}	Reserve base ^{e 9}
	1996	1997 ^e		
United States	(3)	(3)	—	Unknown
Australia	23.1	23.0	500	900
Botswana	5.0	5.0	130	200
Brazil	.6	.6	5	15
China	.9	.9	10	20
Congo (Kinshasa) ¹⁰	15.0	15.0	150	350
Russia	9.2	9.0	40	65
South Africa	6.0	5.5	70	150
Other countries	1.8	3.0	80	200
World total (may be rounded)	61.6	62.0	980	1,900

World Resources: Potential for the discovery of natural diamond resources in the United States, Canada, and Russia has improved. However, technologies to synthesize diamond powder, dust, and grit are used in at least 17 countries and account for about 90% of world industrial diamond output.

Substitutes: Competitive materials include manufactured abrasives (such as cubic boron nitride, fused aluminum oxide, and silicon carbide) and natural abrasives (such as garnet, emery, and corundum). Synthesized polycrystalline diamond is competitive with natural stones in many applications. Research continues on additional uses of synthetic polycrystalline compacts and shapes as substitutes for stones and on the uses of diamond films and diamond-like carbon coatings.

^eEstimated. NA Not available.

¹Industry stocks and employment are unknown.

²Defined as imports - exports including reexports + adjustments for Government and industry stock changes.

³Less than ½ unit.

⁴May include synthetic miners diamond.

⁵Includes diamonds in manufactured abrasive products.

⁶See Appendix B.

⁷See Appendix C for definitions.

⁸Natural industrial diamond only.

⁹See Appendix D for definitions.

¹⁰Formerly Zaire.