

DIAMOND (INDUSTRIAL)

(Data in million carats, unless otherwise noted)

Domestic Production and Use: In 1998, production reached a record high for the second consecutive year and the United States remained the world's largest market for industrial diamond. Virtually all output was synthetic grit and powder. Two firms, one in New Jersey and the other in Ohio, accounted for all of the production. Nine other firms produced polycrystalline diamond from diamond powder. Three companies recovered used industrial diamond as one of their principal operations. Most consumption was accounted for by the following industry sectors: abrasive industries, construction, machinery manufacturing, mineral services, stone and ceramic production, and transportation equipment manufacturing. Mineral services, primarily drilling, accounted for most industrial stone consumption.

Salient Statistics—United States:¹	1994	1995	1996	1997	1998^e
Bort, grit, and powder and dust; natural and synthetic:					
Production: Manufactured diamond	104	115	114	125	130
Secondary	16.0	26.1	20	10	10
Imports for consumption	174	188	218	254	250
Exports ²	150	98	105	126	102
Sales from Government stockpile excesses	2.0	.2	1	.7	—
Consumption, apparent	146	231	248	264	288
Price, value of imports, dollars per carat	.51	.43	.46	.43	.42
Net import reliance ³ as a percent of apparent consumption	16	39	46	49	51
Stones, natural:					
Production: Mine	—	—	(4)	(4)	(4)
Secondary	.1	.3	.4	.5	.5
Imports for consumption ⁵	2.8	4.1	2.9	2.8	3.8
Exports ²	.5	.5	.5	.6	.9
Sales from Government stockpile excesses	3.1	.3	.5	1.2	.4
Consumption, apparent	5.5	4.2	3.3	3.9	3.8
Price, value of imports, dollars per carat	9.41	6.62	7.54	7.69	5.32
Net import reliance ³ as a percent of apparent consumption	98	86	88	87	87

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

Import Sources (1994-97): Bort, grit, and powder and dust; natural and synthetic: Ireland, 53%; China, 13%; Russia, 10%; and other, 24%. Stone, primarily natural: United Kingdom, 31%; Belgium, 19%; Congo (Kinshasa)⁶, 12%; and other, 38%.

Tariff: Item	Number	Normal Trade Relations (NTR)	Non-NTR⁷
		12/31/98	12/31/98
Miners' diamond, carbonados	7102.21.1010	Free	Free.
Other	7102.21.1020	Free	Free.
Industrial diamond, natural advanced	7102.21.3000	1% 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—9-30-98⁸

Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 1998	Disposals FY 1998
Crushing bort	0.0620	—	0.0620	1.0	—
Industrial stones	3.10	0.105	.965	1.0	0.664

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:⁹

	Mine production		Reserves ¹⁰	Reserve base ¹⁰
	1997	1998 ^e		
United States	(4)	(4)	—	Unknown
Australia	22.1	22.0	90	230
Botswana	5.0	5.0	130	200
Brazil	.6	.6	5	15
China	.9	.9	10	20
Congo (Kinshasa) ⁶	12.5	13.0	150	350
Russia	9.6	10.0	40	65
South Africa	5.8	6.0	70	150
Other countries	<u>1.2</u>	<u>1.0</u>	<u>80</u>	<u>200</u>
World total (may be rounded)	57.7	59.0	580	1,200

World Resources: Natural diamond resources have been discovered in more than 35 countries. Nevertheless, nearly all industrial diamond is synthetic. At least 15 countries have the technology to produce synthetic diamond.

Substitutes: Materials that can compete with industrial diamond in some applications include manufactured abrasives such as cubic boron nitride, fused aluminum oxide, and silicon carbide. Synthetic diamond rather than natural diamond is utilized for more than 90% of industrial applications.

^eEstimated. NA Not available.

¹Some data revised to correspond with new information published in the USGS Mineral Industry Surveys annual review of industrial diamond for 1997.

²Reexports no longer are combined with exports as in previous Mineral Commodity Summaries because growing volumes of U.S. reexports obscure apparent consumption rates.

³Defined as imports - exports + adjustments for Government and industry stock changes.

⁴Less than ½ unit.

⁵May include synthetic miners diamond.

⁶Formerly Zaire.

⁷See Appendix B.

⁸See Appendix C for definitions.

⁹Natural industrial diamond only. Note, however, that synthetic diamond production far exceeds natural industrial diamond output. Worldwide production of manufactured industrial diamond totaled at least 500 million carats in 1998; the largest producers included Ireland, Russia, South Africa, and the United States.

¹⁰See Appendix D for definitions.