

DIAMOND (INDUSTRIAL)

(Data in million carats, unless otherwise noted)

Domestic Production and Use: In 1999, production reached a record high for the third 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. Four 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:	1995	1996	1997¹	1998¹	1999^e
Bort, grit, and dust and powder; natural and synthetic:					
Production: Manufactured diamond	115	114	125	140	154
Secondary	26	20	10	10	9
Imports for consumption	188	218	254	221	215
Exports ²	98	105	126	104	100
Sales from Government stockpile excesses	.2	1	.7	(3)	(3)
Consumption, apparent	231	248	264	267	278
Price, value of imports, dollars per carat	.43	.46	.43	.44	.42
Net import reliance ⁴ as a percent of apparent consumption	39	46	49	44	41
Stones, natural:					
Production: Mine	—	(3)	(3)	(3)	(3)
Secondary	.3	.4	.5	.5	.4
Imports for consumption ⁵	4.1	2.9	2.8	4.7	3.3
Exports ²	.5	.5	.6	.8	.7
Sales from Government stockpile excesses	.3	.5	1.2	.8	.6
Consumption, apparent	4.2	3.3	3.9	5.2	3.6
Price, value of imports, dollars per carat	6.62	7.54	7.69	3.92	4.94
Net import reliance ⁴ as a percent of apparent consumption	86	88	87	90	89

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

Import Sources (1995-98): Bort, grit, and dust and powder; natural and synthetic: Ireland, 50%; China, 16%; Russia, 8%; and other, 26%. Stone, primarily natural: United Kingdom, 24%; Belgium, 14%; Ireland, 10%; Congo (Kinshasa),⁶ 8%; and other, 44%.

Tariff: Item	Number	Normal Trade Relations 12/31/99
Miners' diamond, carbonados	7102.21.1010	Free.
Other	7102.21.1020	Free.
Industrial diamond, natural, advanced	7102.21.3000	Free.
Industrial diamond, natural, not advanced	7102.21.4000	Free.
Industrial diamond, other	7102.29.0000	Free.
Grit or dust and powder	7105.10.0000	Free.

Depletion Allowance: 15% (Domestic and foreign).

Government Stockpile:

Stockpile Status—9-30-99⁷

Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 1999	Disposals FY 1999
Crushing bort	—	—	—	0.065	0.063
Industrial stones	2.50	0.213	2.50	0.600	0.599

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Events, Trends, and Issues: The United States will continue to be the world's largest market for industrial diamond well into the 21st century and will remain a significant producer and exporter of industrial diamond as well.

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 ⁹	Reserve base ⁹
	1998	1999 ^e		
United States	(³)	(³)	Unknown	Unknown
Australia	22.5	22.5	90	230
Botswana	5.0	5.0	130	200
Brazil	.6	.6	5	15
China	.9	.9	10	20
Congo (Kinshasa) ⁶	13.0	13.2	150	350
Russia	10.5	10.7	40	65
South Africa	6.2	6.4	70	150
Other countries	<u>1.2</u>	<u>1.2</u>	<u>80</u>	<u>200</u>
World total (may be rounded)	59.9	60.5	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.

¹Some data revised to correspond with new information published in the USGS Mineral Industry Surveys annual review of industrial diamond for 1998.

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

³Less than ½ unit.

⁴Defined as imports - exports + adjustments for Government and industry stock changes.

⁵May include synthetic miners' diamond.

⁶Formerly Zaire.

⁷See Appendix B for definitions.

⁸Natural 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.

⁹See Appendix C for definitions.