## **GARNET, INDUSTRIAL**<sup>1</sup>

(Data in metric tons of garnet, unless noted)

<u>Domestic Production and Use</u>: Garnet was produced in 1995 by five firms, four in New York and one in Idaho. Output of refined material was valued at \$11.2 million. The end uses for garnet were abrasives in the petroleum industry, 41%; filtration media, 20%; transport manufacturing, 19%; finishing wood furniture, 10%; electronic components, 7%; and ceramics and glass, 3%.

Salient Statistics—United States:	1991	1992	1993	1994	1995°
Production (crude)	50,900	54,100	44,000	51,000	53,300
Sold by producers (refined)	48,000	46,100	55,800	40,600	47,900
Imports for consumption <sup>e</sup>	5,000	6,000	12,200	6,000	5,000
Exports <sup>e</sup>	10,000	8,880	11,400	10,000	7,260
Consumption, apparent	44,000	45,700	56,600	37,500	44,900
Price, range of value, dollars per ton	60-2,000	100-2,000	100-2,000	100-2,000	85-1,500
Stocks, producer <sup>e</sup>	11,100	8,640	4,900	4,000	4,720
Employment, mine and mill	150	150	150	160	180
Net import reliance <sup>2</sup> as a percent of					
apparent consumption	Е	Е	Е	E	Е

Recycling: None.

Import Sources (1991-94): Australia, 85%; India, 11%; and China, 4%.

Tariff: Item	Number	Most favored nation (MFN) 12/31/95	Non-MFN <sup>3</sup> 12/31/95
Emery, natural corundum, natural garnet, and other natural abrasives,			
crude	2513.21.0000	Free	Free.
Emery, natural corundum, natural garnet, and other natural abrasives,			
other than crude	2513.29.0000	0.6¢/kg.	2.2¢/kg.
Natural abrasives on woven textile	6805.10.0000	2.0% ad val.	20% ad val.
Natural abrasives on paper or paperboard Natural abrasives sheets, strips, disks,	6805.20.0000	2.0% ad val.	20% ad val.
belts, sleeves, or similar form	6805.30.0000	2.0% ad val.	20% ad val.

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

Government Stockpile: None.

## **GARNET, INDUSTRIAL**

**Events, Trends, and Issues:** Imports from Australia continued to be used in the U.S. filtration and blasting media markets, but did not appear to affect domestic production negatively. The market appears to be large enough to absorb additional imports without harming U.S. producers. The garnet reclaim plant in Harvey, LA, was used intermittently as a distribution warehouse. Currently, evaluation and feasibility studies are underway on major garnet deposits in Arizona, California, Colorado, Montana, and New Mexico.

## **World Mine Production, Reserves, and Reserve Base:**

	Mine production		Reserves <sup>4</sup>	Reserve base <sup>4</sup>
	<u>1994</u>	<u>1995</u> °		
United States	40,600	47,900	5,000,000	25,000,000
Australia	30,000	30,000	1,000,000	7,000,000
China	18,000	15,000	Moderate to Large	Moderate to Large
India	10,000	15,000	500,000	20,000,000
Other countries	2,000	2,000	<u>6,500,000</u>	20,000,000
World total (rounded)	101,000	110,000	Moderate	Large

**World Resources:** Garnets occur worldwide in a variety of rocks, particularly gneisses and schists. They also occur as contact-metamorphic deposits in crystalline limestones, pegmatites, and serpentinites, and in high-temperature intrusive contacts and vein deposits. Alluvial garnet also is a coproduct with many heavy mineral sand and gravel deposits in the world. Large domestic resources of garnet are concentrated in coarsely crystalline gneiss near North Creek, NY. One of the world's largest known garnet deposits in Rangley County, ME, is not currently being mined. The medium-grained ore from this deposit, has an unusually high garnet concentration of 50% to 60%. Significant resources of garnet also occur in Idaho, Montana, New Hampshire, North Carolina, and Oregon. World resources of garnet are large.

<u>Substitutes</u>: Garnet is competitive in abrasive applications with natural and manufactured abrasives, such as diamond, cubic boron nitride, fused aluminum oxide, silicon carbide, and quartz sand; in filtration media with ilmenite, magnetite, and plastics; and in nonskid surfaces with emery.

<sup>&</sup>lt;sup>e</sup>Estimated. E Net exporter.

<sup>&</sup>lt;sup>1</sup>Excludes gem and synthetic garnet.

<sup>&</sup>lt;sup>2</sup>Defined as imports - exports + adjustments for Government and industry stock changes.

<sup>&</sup>lt;sup>3</sup>See Appendix B.

<sup>&</sup>lt;sup>4</sup>See Appendix C for definitions.