

THALLIUM

(Data in kilograms of thallium content, unless noted)

Domestic Production and Use: Thallium is a byproduct metal recovered in some countries from flue dusts and residues collected in the smelting of copper, zinc, and lead ores. Although thallium was contained in ores mined or processed in the United States, it was not recovered domestically in 1995. The estimated value of thallium consumed in 1995 was \$210,000. Research and development in the use of thallium-base superconductor materials accounted for a significant portion of the thallium consumed domestically in 1995. Thallium also was used in electronics, alloys, glass manufacturing, and pharmaceuticals.

Salient Statistics—United States:	1991	1992	1993	1994	1995^e
Imports for consumption ¹	1,013	838	273	630	700
Exports	NA	NA	NA	NA	NA
Consumption ^e	850	800	300	630	700
Price, metal, dollars per kilogram ²	190	230	230	285	300
Net import reliance ³ as a percent of apparent consumption	100	100	100	100	100

Recycling: None.

Import Sources (1991-94): Belgium, 69%; Canada, 27%; and United Kingdom, 4%.

Tariff:	Item	Number	Most favored nation (MFN)⁴ 12/31/95	Non-MFN⁵ 12/31/95
	Unwrought waste and scrap	8112.91.6000	5.2% ad val.	25% ad val.

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

Government Stockpile: None.

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Events, Trends, and Issues: Research and development activities of both a basic and applied nature were conducted during 1995 to improve and expand the use of thallium. These experimental activities concerned essentially all existing uses of thallium as well as its potential use in superconductor alloys.

Thallium metal and its compounds are highly toxic materials and are strictly controlled to prevent a threat to humans and the environment. Thallium and its compounds can be absorbed into the human body by skin contact, ingestion, or inhalation of dust or fumes.

World Mine Production, Reserves, and Reserve Base:⁶

	Mine production		Reserves ⁷	Reserve base ⁷
	<u>1994</u>	<u>1995</u>		
United States	(8)	(8)	32,000	120,000
Other countries	<u>15,000</u>	<u>15,000</u>	<u>350,000</u>	<u>530,000</u>
World total (may be rounded)	15,000	15,000	380,000	650,000

World Resources: World resources of thallium contained in zinc resources are about 17 million kilograms, most of which is in Europe, Canada, and the United States. An additional 630 million kilograms is in the world's coal resources. The average thallium content of the Earth's crust has been estimated at 0.7 parts per million.

Substitutes: While other light-sensitive materials can substitute for thallium and its compounds in specific electronic applications, ample supplies of thallium discourage development of substitute materials.

⁶Estimated. NA Not available.

¹Unwrought and waste and scrap, including thallium contained in compounds.

²Estimated price of 99.99%-pure metal.

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

⁴No tariff for Canada according to North American Free Trade Agreement.

⁵See Appendix B.

⁶Estimates, based on thallium content of zinc ores.

⁷See Appendix C for definitions.

⁸Thallium contained in mined base metal ores, estimated at 450 to 500 kilograms per year, is separated from the base metals but not extracted for commercial use.