TANTALUM

(Data in metric tons of tantalum content unless otherwise noted)

Domestic Production and Use: No significant U.S. tantalum mine production has been reported since 1959. Domestic tantalum resources are of low grade, some mineralogically complex, and most are not commercially recoverable. Three companies produced tantalum alloys, compounds, and metal from imported concentrates; and metal and alloys were recovered from foreign and domestic scrap. Tantalum was consumed mostly in the form of alloys, compounds, fabricated forms, ingot, and metal powder. Tantalum capacitors were estimated to account for more than 60% of tantalum use. Major end uses for tantalum capacitors include automotive electronics, pagers, personal computers, and portable telephones. The value of tantalum consumed in 2006 was estimated at about $164 million.

Salient Statistics—United States:[1]	2002	2003	2004	2005	2006[e]
Production, mine	—	—	—	—	—
Imports for consumption:					
Mineral concentrates[e]	730	480	450	380	300
Tantalum metal, alloys, waste, scrap[e]	308	283	659	599	578
Exports, concentrate, metal, alloys, waste, scrap[e]	511	581	717	613	530
Government stockpile releases[e, 2]	18	218	205	245	254
Consumption, apparent	657	513	673	682	695
Price, tantalite, dollars per pound[3]	31.00	28.00	30.80	34.50	32.40
Net import reliance[4] as a percentage of apparent consumption	83	79	89	90	87

Recycling: Tantalum was recycled mostly from new scrap that was generated during the manufacture of tantalum-containing electronic components and from tantalum-containing cemented carbide and superalloy scrap. Tantalum in this scrap was estimated to be about 20% of apparent consumption. Tantalum recycled from old scrap was estimated to be about 13% of apparent consumption in 2006.

Import Sources (2002-05): Australia, 54%; Canada, 11%; China, 8%; Japan, 6%; and other, 21%.

Tariff: Item	Number	Normal Trade Relations 12-31-06
Synthetic tantalum-columbium concentrates	2615.90.3000	Free.
Tantalum ores and concentrates	2615.90.6060	Free.
Tantalum oxide	2825.90.9000	3.7% ad val.
Potassium fluotantalate	2826.90.0000	3.1% ad val.
Tantalum, unwrought:		
Powders	8103.20.0030	2.5% ad val.
Alloys and metal	8103.20.0090	2.5% ad val.
Tantalum, waste and scrap	8103.30.0000	Free.
Tantalum, other	8103.90.0000	4.4% ad val.

Depletion Allowance: 22% (Domestic), 14% (Foreign).

Government Stockpile: For fiscal year 2006, the Defense National Stockpile Center (DNSC), Defense Logistics Agency, sold about 2 tons of tantalum carbide powder, about 9 tons of tantalum metal ingots, about 254 tons of tantalum contained in tantalum-columbium minerals, and about 9 tons of tantalum contained in tantalum oxide from the National Defense Stockpile. There were no sales of tantalum capacitor-grade metal in fiscal year 2006. The DNSC announced maximum disposal limits for fiscal year 2007 of about 2 tons[5] of tantalum contained in tantalum carbide powder, about 5 tons[5] of tantalum contained in tantalum metal powder, about 227 tons[5] of tantalum contained in tantalum minerals, and about 9 tons[5] of tantalum contained in tantalum oxide.

Prepared by **Michael J. Magyar [(703) 648-4964, mmagyar@usgs.gov, fax: (703) 648-7757]**

TANTALUM

Material	Stockpile Status—9-30-06[6] Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 2006	Disposals FY 2006
Tantalum:					
Carbide powder	3.6	—	3.6	[7]2	2
Metal:					
Powder	—	—	—	[7]18	—
Ingots	—	1	—	[7]18	9
Minerals	63	—	63	227	254
Oxide	—	—	—	9	9

Events, Trends, and Issues: U.S. apparent consumption of tantalum in 2006 was estimated to be about 2% greater than that in 2005. Australia supplied about 77% of tantalum mineral concentrate imports for consumption, by weight, and about 84% of the value. Belgium, Brazil, China, and the Netherlands were the major destinations for the tantalum exports in 2006. In September, quoted spot price ranges for tantalum minerals (per pound tantalum pentoxide content), in three published sources, were $30 to $35, $23.50 to $35, and $34 to $38. Public information on current prices for tantalum products was not available. According to industry sources, the pricing for tantalum products is mostly established by negotiation between buyer and seller; product specifications, volume, and processing requirements influence the negotiated price.

World Mine Production, Reserves, and Reserve Base:

	Mine production[8] 2005	2006[e]	Reserves[9]	Reserve base[9]
United States	—	—	—	Negligible
Australia	730	730	40,000	80,000
Brazil	250	260	NA	73,000
Burundi	6	9	NA	NA
Canada	70	70	3,000	NA
Congo (Kinshasa)	25	10	NA	NA
Ethiopia	45	70	NA	NA
Mozambique	81	81	NA	NA
Namibia	3	3	NA	NA
Nigeria	5	5	NA	NA
Rwanda	40	50	NA	NA
Uganda	0.1	—	NA	NA
Zimbabwe	NA	0.2	NA	NA
Other countries[10]	NA	NA	NA	NA
World total (rounded)	1,260	1,290	43,000	150,000

World Resources: Identified resources of tantalum, most of which are in Australia, Brazil, and Canada, are considered adequate to meet projected needs. The United States has about 1,500 tons of tantalum resources in identified deposits, all of which are considered uneconomic at 2006 prices.

Substitutes: The following materials can be substituted for tantalum, but usually with less effectiveness: columbium in carbides; aluminum and ceramics in electronic capacitors; columbium, glass, platinum, titanium, and zirconium in corrosion-resistant equipment; and columbium, hafnium, iridium, molybdenum, rhenium, and tungsten in high-temperature applications.

[e]Estimated. NA Not available. — Zero.

[1]Revisions principally based on reevaluation of import and export data.

[2]Disposals reported by DNSC, net quantity (uncommitted inventory).

[3]Yearend average price from trade journals, per pound of contained pentoxides.

[4]Defined as imports – exports + adjustments for Government and industry stock changes.

[5]Actual quantity limited to remaining sales authority; additional legislative authority is required.

[6]See Appendix B for definitions.

[7]Actual quantity limited to remaining sales authority or inventory.

[8]Excludes production of tantalum contained in tin slags.

[9]See Appendix C for definitions.

[10]Bolivia, China, Russia, and Zambia also produce (or are believed to produce) tantalum mineral concentrates, but available information is inadequate to make reliable estimates of output levels.