

## 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 2007 was estimated at about \$47 million.

<b>Salient Statistics—United States:</b> <sup>1</sup>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007<sup>e</sup></b>
Production:					
Mine	—	—	—	—	—
Recycling	NA	NA	NA	NA	NA
Imports for consumption	957	1,536	1,625	1,158	1,200
Exports	619	984	984	949	750
Government stockpile releases <sup>e, 2</sup>	336	127	210	289	2
Consumption, apparent	674	679	915	435	452
Price, tantalite, dollars per pound of Ta <sub>2</sub> O <sub>5</sub> content <sup>3</sup>	30	30	35	32	36
Net import reliance <sup>4</sup> as a percentage of apparent consumption	100	100	100	100	100

**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. In 2007, tantalum contained in imported tantalum scrap amounted to about 30% of tantalum apparent consumption.

**Import Sources (2003-06):** Tantalum contained in niobium (columbium) and tantalum ore and concentrate; tantalum metal; and tantalum waste and scrap: Australia, 19%; Brazil, 19%; China, 12%; Germany, 9%; and other, 41%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations 12-31-07</b>
	Synthetic tantalum-niobium concentrates	2615.90.3000	Free.
	Tantalum ores and concentrates	2615.90.6060	Free.
	Tantalum oxide	2825.90.9000	3.7% ad val.
	Potassium fluotantalate	2826.90.9000	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:** In fiscal year 2007, the Defense National Stockpile Center (DNSC), Defense Logistics Agency, sold about 1.87 tons of tantalum carbide powder and 63 tons of tantalum contained in tantalum-niobium minerals. DNSC announced maximum disposal limits for fiscal year 2008 of about 3.63 tons<sup>5</sup> of tantalum contained in tantalum carbide powder. DNSC exhausted stocks of tantalum minerals in fiscal year 2007; metal powder in fiscal year 2006; metal oxide in fiscal year 2006; and metal ingots in fiscal year 2005.

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Material	Stockpile Status—9-30-07 <sup>6</sup>			Disposal plan FY 2007	Disposals FY 2007
	Uncommitted inventory	Committed inventory	Authorized for disposal		
Tantalum:					
Carbide powder	1.73	—	1.73	<sup>7</sup> 1.81	1.87
Metal:					
Powder	—	—	—	<sup>7</sup> 4.54	—
Ingots	—	—	—	—	—
Minerals	—	—	—	227	63.1
Oxide	—	—	—	9.07	—

**Events, Trends, and Issues:** U.S. tantalum apparent consumption in 2007 was estimated to increase about 4% from that of 2006. Tantalum ore and concentrate, metals, and waste and scrap were the leading imported tantalum materials, with each accounting for approximately equal amounts of tantalum. By weight, Australia supplied about 79% of tantalum mineral concentrate imports for consumption; Brazil, about 32% of metal; and China, 30% of waste and scrap.

**World Mine Production, Reserves, and Reserve Base:** The Australian reserve base was revised based on information reported by the government of Australia. Brazilian reserves and reserve base were revised based on information reported by the government of Brazil. Reserves of Canada were revised based on preproduction reserves and cumulative production.

	Mine production <sup>8</sup>		Reserves <sup>9</sup>	Reserve base <sup>9</sup>
	2006	2007 <sup>e</sup>		
United States	—	—	—	Negligible
Australia	850	850	40,000	84,000
Brazil	250	250	88,000	90,000
Canada	68	70	3,000	>3,000
Ethiopia	70	70	NA	NA
Mozambique	70	70	NA	NA
Rwanda	62	60	NA	NA
Other countries	32	30	NA	NA
World total (rounded)	1,400	1,400	130,000	180,000

**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 2007 prices.

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

<sup>e</sup>Estimated. NA Not available. — Zero.

<sup>1</sup>Revisions principally based on reevaluation of import and export data.

<sup>2</sup>Disposals reported by DNSC, net quantity (uncommitted inventory).

<sup>3</sup>Price is an average based on trade journal reported prices. Changes from previous year's series are due to a change in basis of calculation.

<sup>4</sup>Defined as imports – exports + adjustments for Government and industry stock changes.

<sup>5</sup>Actual quantity limited to remaining sales authority or inventory; additional legislative authority is required.

<sup>6</sup>[See Appendix B for definitions.](#)

<sup>7</sup>Actual quantity limited to remaining sales authority or inventory.

<sup>8</sup>Excludes production of tantalum contained in tin slags.

<sup>9</sup>[See Appendix C for definitions.](#)