

## 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. Companies in the United States 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 2010 was estimated at about \$174 million and was expected to be about \$200 million in 2011 as measured by the value of imports.

<b>Salient Statistics—United States:</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011<sup>e</sup></b>
Production:					
Mine	—	—	—	—	—
Secondary	NA	NA	NA	NA	NA
Imports for consumption <sup>e, 1</sup>	1,160	1,290	798	1,600	1,700
Exports <sup>e, 1</sup>	511	662	326	438	540
Government stockpile releases <sup>e, 2</sup>	—	—	—	—	—
Consumption, apparent	644	629	473	1,160	1,200
Price, tantalite, dollars per pound of Ta <sub>2</sub> O <sub>5</sub> content <sup>3</sup>	37	44	40	54	130
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.

**Import Sources (2007–10):** Tantalum contained in niobium (columbium) and tantalum ore and concentrate; tantalum metal; and tantalum waste and scrap—China, 18%; Germany, 13%; Kazakhstan, 10%; Australia, 10%; and other, 49%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations 12-31-11</b>
	Synthetic tantalum-niobium concentrates	2615.90.3000	Free.
	Tantalum ores and concentrates	2615.90.6060	Free.
	Tantalum oxide <sup>5</sup>	2825.90.9000	3.7% ad val.
	Potassium fluotantalate <sup>5</sup>	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 (FY) 2011, which ended on September 30, 2011, the Defense Logistics Agency, DLA Strategic Materials sold no tantalum materials. The DLA Strategic Materials announced that maximum disposal limits for tantalum carbide powder in FY 2012 was zero. The DLA Strategic Materials exhausted stocks of tantalum minerals in FY 2007, metal powder in FY 2006, metal oxide in FY 2006, and metal ingots in FY 2005.

<b>Material</b>	<b>Stockpile Status—9-30-11<sup>6</sup></b>			
	<b>Uncommitted inventory</b>	<b>Authorized for disposal</b>	<b>Disposal plan FY 2011</b>	<b>Disposals FY 2011</b>
Tantalum carbide powder	1.73	1.73	7—	—

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**Events, Trends, and Issues:** U.S. tantalum apparent consumption in 2011 was estimated to increase about 3% from that of 2010. Tantalum waste and scrap was the leading imported tantalum material, accounting for more than 67% of tantalum imports. By weight, averaged from 2007 through 2010, the leading suppliers of tantalum imports for consumption were: mineral concentrate, Australia, 61%; Canada, 20%; and Mozambique, 16%; metal, China, 33%; Kazakhstan, 26%; and Germany, 13%; and waste and scrap, Germany, 17%; Russia, 14%; and Mexico, 12%. The United States rebounded from financial market problems and the subsequent economic slowdown in 2008 and 2009, as the world economy continued a slow recovery; however, a developing debt crisis in Europe reduced recovery expectations. Several tantalum mines that were put on care and maintenance have reopened [Wodgina Mine (Australia) in December 2008, and Tanco (Canada) and Marropino (Mozambique) in April 2009].

**World Mine Production and Reserves:** Reserves for Australia were raised to agree with the Government of Australia's "Accessible Economic Demonstrated Resources."

	Mine production <sup>8</sup>		Reserves <sup>9</sup>
	2010	2011 <sup>e</sup>	
United States	—	—	—
Australia	—	80	51,000
Brazil	180	180	65,000
Canada	—	25	NA
Mozambique	120	120	3,200
Rwanda	110	110	NA
Other countries <sup>10</sup>	271	270	NA
World total (rounded)	681	790	120,000

**World Resources:** Identified resources of tantalum, most of which are in Australia and Brazil, 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 2011 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>Imports and exports include the estimated tantalum content of niobium and tantalum ores and concentrates, unwrought tantalum alloys and powder, tantalum waste and scrap, and other tantalum articles.

<sup>2</sup>Government stockpile inventory reported by DLA Strategic Materials is the basis for estimating Government stockpile releases.

<sup>3</sup>Price is annual average price reported in Ryan's Notes.

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

<sup>5</sup>This category includes other than tantalum-containing material.

<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 resource/reserve definitions and information concerning data sources.](#)

<sup>10</sup>Includes Burundi, Congo (Kinshasa), Ethiopia, Somalia, Uganda, and Zimbabwe.