

## 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 2012 was estimated at about \$285 million and was expected to exceed \$300 million in 2013 as measured by the value of imports.

<b>Salient Statistics—United States:</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013<sup>e</sup></b>
Production:					
Mine	—	—	—	—	—
Secondary	NA	NA	NA	NA	NA
Imports for consumption <sup>e, 1</sup>	798	1,600	1,850	1,010	1,110
Exports <sup>e, 1</sup>	326	438	648	577	833
Government stockpile releases <sup>e, 2</sup>	—	—	—	—	—
Consumption, apparent	473	1,160	1,210	437	278
Price, tantalite, dollars per pound of Ta <sub>2</sub> O <sub>5</sub> content <sup>3</sup>	40	54	125	108	110
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 (2009–12):** Tantalum minerals: Mozambique, 24%; Australia, 21%; and Canada, 20%. Tantalum metal: China, 30%; Kazakhstan, 27%; and Germany, 14%. Tantalum waste and scrap: Estonia, 22%; Russia, 14%; and China, 12%. Tantalum contained in niobium (columbium) and tantalum ore and concentrate; tantalum metal; and tantalum waste and scrap: China, 19%; Germany, 13%; Kazakhstan, 11%; Russia, 7%; and other, 50%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–13</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 fluortantalate <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) 2013, which ended on September 30, 2013, the Defense Logistics Agency, DLA Strategic Materials sold no tantalum materials. The DLA Strategic Materials has not yet announced maximum disposal limits for tantalum carbide powder in FY 2014. 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—9–30–13<sup>6</sup></b>			
	<b>Uncommitted inventory</b>	<b>Authorized for disposal</b>	<b>Disposal plan FY 2012</b>	<b>Disposals FY 2012</b>
Tantalum carbide powder	1.71	7—	7—	—
Tantalum metal scrap	0.09	7—	7—	—

## TANTALUM

**Events, Trends, and Issues:** U.S. tantalum apparent consumption in 2013 was estimated to have been about 60% that of 2012. Tantalum waste and scrap was the leading imported tantalum material, accounting for about 51% of tantalum imports.

**World Mine Production and Reserves:** Reserves for Brazil were revised based on a Departamento Nacional de Produção Mineral publication. Reserves for Australia were revised based on a Geoscience Australia publication.

	Mine production <sup>8</sup>		Reserves <sup>9</sup>
	<u>2012</u>	<u>2013<sup>e</sup></u>	
United States	—	—	—
Australia	—	—	<sup>10</sup> 62,000
Brazil	140	140	36,000
Burundi	33	30	NA
Canada	50	50	NA
Congo (Kinshasa)	100	110	NA
Ethiopia	95	10	NA
Mozambique	39	40	NA
Nigeria	63	60	NA
Rwanda	<u>150</u>	<u>150</u>	<u>NA</u>
World total (rounded)	670	590	>100,000

**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 2013 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 applications; 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>For Australia, Joint Ore Reserves Committee (JORC)-compliant reserves were 29,000 tons.