

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 are mineralogically complex, and most are not commercially recoverable. Companies in the United States produced tantalum alloys, compounds, and metal from imported tantalum-containing materials, and metal and alloys were recovered from foreign and domestic scrap. Tantalum domestic consumption is not reported. Major end uses for tantalum capacitors include automotive electronics, mobile phones, and personal computers. Tantalum oxide is used in glass lenses to get lighter weight lenses that produce a brighter image. Tantalum carbide is used in cutting tools. The value of tantalum consumed in 2015 was expected to exceed \$290 million as measured by the value of imports.

Salient Statistics—United States:	2011	2012	2013	2014	2015^e
Production:					
Mine	—	—	—	—	—
Secondary	NA	NA	NA	NA	NA
Imports for consumption ^{e, 1}	1,850	1,010	1,100	1,230	1,250
Exports ^{e, 1}	648	577	844	754	600
Government stockpile releases ^{e, 2}	—	—	—	—	—
Consumption, apparent	1,210	437	260	479	650
Price, tantalite, dollars per pound of Ta ₂ O ₅ content ³	125	108	118	100	88
Net import reliance ⁴ 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 (2011–14): Tantalum minerals: Brazil, 40%; Rwanda, 17%; Canada, 11%; Australia, 10%; and other, 22%. Tantalum metal: China, 29%; Kazakhstan, 28%; Germany, 15%; Thailand, 11%; and other, 17%. Tantalum waste and scrap: Estonia, 21%; Indonesia, 17%; China, 14%; and other 48%. Tantalum contained in niobium (columbium) and tantalum ore and concentrate; tantalum metal; and tantalum waste and scrap: China, 18%; Germany, 12%; Indonesia, 9%; Kazakhstan, 9%; and other, 52%.

Tariff:	Item	Number	Normal Trade Relations 12–31–15
	Synthetic tantalum-niobium concentrates	2615.90.3000	Free.
	Tantalum ores and concentrates	2615.90.6060	Free.
	Tantalum oxide ⁵	2825.90.9000	3.7% ad val.
	Potassium fluorotantalate ⁵	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:

Stockpile Status—9–30–15⁶

Material	Inventory	Disposal Plan FY 2015	Disposals FY 2015
Tantalum carbide powder	1.71	—	—
Tantalum metal scrap	0.09	—	—

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Events, Trends, and Issues: U.S. tantalum apparent consumption in 2015 was estimated to have increased by 36% from that of 2014. Tantalum waste and scrap was the leading imported tantalum material, accounting for about 51% of tantalum imports. In 2015, the average monthly price of tantalum ore remained at about \$88 per pound of Ta₂O₅ content from January through August. This was 20% lower than the average price of \$110 in 2014. Rwanda accounts for about 50% of global tantalum production and Congo (Kinshasa) accounts for about 17%. The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) included provisions that required companies to disclose the source of conflict minerals [defined to be tantalum, tin, tungsten, and gold (3TG)] used in their production processes.

The United States, through the enactment of Section 1502 of the Dodd-Frank Act in 2010, made it a statutory obligation for all companies registered with the U.S. Securities and Exchange Commission (SEC) to perform due diligence to determine whether the products they manufacture, or the components of the products they manufacture, contain tantalum, tin, tungsten, and (or) gold minerals and, if so, to determine whether these minerals were sourced from Congo (Kinshasa) and (or) its bordering countries. Under rules issued by the SEC, publicly traded companies were required to report the sources of 3TG materials used by May 2014. The Federal courts issued a decision that the SEC must have the final resource extraction rule ready for congressional decision by June 27, 2016.

Canada, China, and the European Union considered legislation similar to the Dodd-Frank Act mineral information identification to promote responsible sourcing of mineral resources from Congo (Kinshasa) or its adjoining countries.

World Mine Production and Reserves:

	Mine production		Reserves ⁷
	2014	2015 ^e	
United States	—	—	—
Australia	50	50	⁸ 67,000
Brazil	150	150	36,000
China	60	60	NA
Congo (Kinshasa)	200	200	NA
Rwanda	600	600	NA
Other	140	140	NA
World total (rounded)	1,200	1,200	>100,000

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 2015 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.

^eEstimated. NA Not available. — Zero.

¹Imports 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.

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

³Price is annual average price reported in Ryan's Notes.

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

⁵This category includes other than tantalum-containing material.

⁶See [Appendix B](#) for definitions.

⁷See [Appendix C](#) for resource/reserve definitions and information concerning data sources.

⁸For Australia, Joint Ore Reserves Committee-compliant reserves were 30,000 tons.