

Tantalum

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73

Ta

180.95

Tantalum

Tantalum is a blue-gray, transition metal that is fabricated by the process of hydrometallurgy. Part of the refractory metals group, tantalum is very hard, extremely ductile in the annealed condition, highly conductive of heat and electricity and has the fourth highest melting point (3017°C) of any metallic element. Tantalum is best noted for its chemical inertness and high resistance to corrosion by acids. In fact, below 150°C it is almost completely immune to corrosion by aqua regia. Tantalum has proven to be a cost-effective solution for dental and medical devices due to resistance to attack by body fluids.

APPLICATIONS

Electronic Industry: Capacitors, cathodes for use in electrochemical analysis, computer components, cameras

Medical Industry: Surgical implants, hypodermic needles, surgical tools

Dental Industry: Dental instruments and dental spatulas

Typical Physical Properties

Density	lb/in ³	0.60
	gm/cm ³	16.60
Melting Point	°F	5463
	°C	3017
Electrical Resistivity	Micro-ohm-cm	12.40
Thermal Conductivity	Cal/cm ² /cm ² C/sec	0.13
Specific Heat	Cal/gm/°C	0.036
Coefficient of Linear Thermal Expansion	Micro-in/°F x 10 ⁻⁶	3.60
	Micro-in/°C x 10 ⁻⁶	6.60

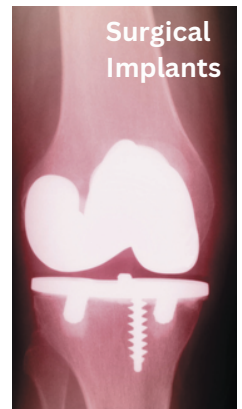
Typical Mechanical Properties

Tensile Strength	KSI (MPa) RT	50 (345)
	KSI (MPa)-500 °C	35 (240)
	KSI (MPa)-1000 °C	15 (100)
Elongation	% in 1.0"	20
Typical Hardness	DPH/RC	220
Modulus of Elasticity	KSI (GPa)	27 (186)

Forms | Sizes

Coil/Strip	0.010"-2.000"
Plate	0.1875"-0.500"
Round Bar	0.010"-2.000"
Sheet	0.005"-0.187"
Wire	0.001"-0.250"

If you do not see the size you require listed above, please call us at 800-348-6268. We can custom stock products in the size you require. No order is too small.

**Capacitors****Surgical Implants**

CHEMISTRY

99.2 Tantalum (Ta) Minimum



Specifications

AMS 7849 ASTM B365 UNS R05200

Special Purpose Alloys & Metal From Stock

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EFINEA

Capabilities Beyond Infinity

1-800-348-6268 | efineametals.com



EFINEA Services

Slitting, Sheering, Grinding, Water Jet Cutting, Laser Cutting, Saw Cutting, Custom Stocking and Consignment Programs

Just-In-Time-Delivery

All of our standard stock items can be shipped within 24-hours of your order confirmation and most are shipped the same day. All materials certified with shipment. For special orders and non-stock materials, contact our sales team for our competitive pricing and delivery lead times

Controlled Expansion | Glass Sealing

EFINEA Supplies the highest quality metals and alloys including materials from Carpenter Technology Corp.

Kovar® | ASTM F15® Alloy

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil

Trade Names: Kovar, Pernifer®, 2918, NILO®42, DilverP1®

Alloy 42 / 46 / 48 / 52

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil

Trade Names: Pernifer®40, 46, 48, 50, NILO®42, 46, 48; Glass Sealing 42, 46, 48, 52

Free-Cut Invar "36"® Alloy

Forms: Round Bar/ Rod

Invar "36" Alloy

Forms: Plate Sheet

Trade Names: Pernifer®36, NILO®36, Invar

Super Invar 32-5®

Forms: Plate, Round Bar/Rod, Sheet

Refractory Metals & Alloys

EFINEA is your leading source for quality refractory metals & alloys. We stock DFARS Molybdenum, ML/MLS/MLR, Molybdenum TZM Tantalum & Tungsten manufactured from Plansee

Molybdenum

Forms: Plate, Round Bar/Rod, Sheet/Coiled Sheet, Threaded Rod/Nuts, Wire

Molybdenum Lanthanum Oxide (ML)

Forms: Sheet - Stress Relieved, Recrystallized

Molybdenum TZM

Forms: Plate, Round Bar/ Rod, Sheet

Niobium

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil

Rhenium

Forms: Plate, Round Bar/ Rod, Sheet, Strip/Coil

Tantalum

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil, Wire

Tungsten

Forms: Plate, Precision Cut wire, Round Bar/Rod, Sheet

Tungsten Alloys

Forms: Blanks, Flats, Parts, Plate/Sheet, Rod, Shapes

Soft Magnetic Alloys | EMI Shielding & Laminations

EFINEA is a distributor of "EMI shielding alloys" for VDM Metals GmbH the world's leading producer of these alloys.

EFINEA Alloy 50

Forms: Round Bar/Rod, Square Bar, Strip/Coil, Wire Rod

Trade Names: High Permeability 49®, Mangnifer®50

EFINEA Alloy 79

Forms: Rectangular Bar, Round Bar/Rod, Sheet, Strip/Coil

Trade Names: Hipernom, HyMu80 Magnifer®7904, Molypermalloy, Permalloy 80®

Hiperco®50

Forms: Strip/Coil

Hiperco®50A

Forms: Plate, Round Bar/Rod, Strip/Coil

Hiperco®50 HS

Forms: Strip/Coil

Core Iron (Pure Iron)

Forms: Round Bar/Rod, Plate

Trade Names: Electrical Iron®, Alliedpureiron®

Electrical & Electronic Nickels

EFINEA supplies select, Commercially pure grades of Nickel in various forms and sizes.

Electronic Nickels

200/201/205/233/270

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil, Wire

Copper Metals

EFINEA supplies select, Commercially pure grades of Copper in Coil Form

Copper OFHC 101/102

Nickel-Silver 770

Cupro-Nickel 715 (CuNi 70/30)

Forms: Coil

Stainless Steels & Other Alloys

EFINEA supplies select aircraft quality grades of Stainless Steel available in various forms and sizes.

17-4PH (Type 630)

15-5PH Vac Melt

300 Grade Stainless Steel Coils

Forms: Round Bar/Coils

EFINEA METALS | www.efineametals.com | sales@efineametals.com