

Tantalum

Refractory Metals and Alloys

DESCRIPTION

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°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	Vickers/MPa	870-1200
Modulus of Elasticity	KSI (GPa)	27 (186)

FORMS | SIZES AVAILABLE

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 %

99.99 Tantalum (Ta) Minimum

SPECIFICATIONS

AMS 7849 ASTM B365 UNS R05200

Special Purpose Alloys & Metals From Stock

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Special Purpose Alloys

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Controlled Expansion | Glass Sealing

Ed Fagan Inc. supplies the highest quality metals and alloys including materials from Carpenter Technology Corp.

Kovar® | ASTM F15 Alloy

Forms: Plate, Round Bar, Sheet, Strip/Coil, Wire
Trade Names: Kovar®, Pernifer® 2918, NILO K®, DilverP1®

Alloy 42/46/48/52

Forms: Plate, Round Bar, Sheet, Strip/Coil, Wire
Trade Names: Pernifer®40, 46, 48, 50; NILO® 42, 46, 48, 50; Glass Seal 42, 46, 48, 50

Free-Cut Invar "36"® Alloy

Forms: Round Bar, Wire

Invar "36"® Alloy

Forms: Plate, Sheet
Trade Names: Pernifer® 36, NILO® 36, Invar

Super Invar 32-5®

Forms: Plate, Round Bar, Sheet

Refractory Metals and Alloys

Ed Fagan Inc. is your leading source for quality refractory metals and alloys. We stock Tungsten, Molybdenum and its alloys in various forms and sizes manufactured from Plansee Group.

Molybdenum

Forms: Plate, Precision Cut Wire, Round Bar, Sheet/Strip, Spooled Wire, Threaded Rod/Nuts

Molybdenum Lanthanum Oxide (ML)

Forms: Sheet – Stress Relieved, Recrystallized

Molybdenum TZM

Forms: Plate, Round Bar

Niobium

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

Rhenium

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

Tantalum

Forms: Round Bar, Sheet

Tungsten

Forms: Parts (To Specification), Plate, Precision Cut Wire, Round Bar, Sheet

Tungsten Alloy

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

Soft Magnetic Alloys | EMI Shielding & Laminations

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

EFI Alloy 50

Forms: Round Bar, Square Bar, Strip/Coil, Wire
Trade Names: Alloy 4750, High Permeability 49®, Magnifer® 50

EFI Alloy 79

Forms: Rectangular Bar, Round Bar, Sheet, Strip/Coil, Wire
Trade Names: Hipernom, HyMu80®, Magnifer® 7904, Molypermalloy, Permalloy 80®

Hiperco® 50, Hiperco® 50A, Hiperco® 50 HS

Forms: Plate, Round Bar, Strip/Coil

Carpenter VimVar Core Iron

Forms: Plate, Round Bar

Electrical & Electronic Nickels

Ed Fagan Inc. supplies select, commercially pure grades of Nickel in various forms and sizes.

Electronic Nickels

200/201/205/233/270

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

Alloys and Metals We Distribute

Corrosion Resistant Alloys • High-Temperature Alloys • Stainless Steel
• Titanium – CP, 6 Al-4V

Ed Fagan Inc. Services

Slitting, Shearing, Saw Cutting, Grinding, Water Jet Cutting, Laser 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.

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