



**ED FAGAN INC.**

# Tantalum

# Refractory Metals



769 Susquehanna Avenue, Franklin Lakes, NJ 07417 • **phone 201.891.4003**  
10537 Humbolt Street, Los Alamitos, CA 90720 • **phone 562.431.2568**

## DESCRIPTION

Tantalum is famous for its resistance to corrosion by acids; in fact, below 150°C, tantalum is almost completely immune to corrosion by aqua regia. Due to its resistance to attack by body fluids, tantalum provides an excellent material for medical devices. Due to its much longer service life and maintenance-free durability, tantalum has proven to be your most cost-effective solution for corrosion protection in pharmaceutical and chemical processing applications. Another major use of tantalum is for electronic components and due to its absorption properties, it is an excellent getter of residual gasses in evacuation tubes.

## APPLICATIONS

Capacitors; surgical implants and instruments; ink jet nozzles.

## PHYSICAL PROPERTIES

|  |                                      |       |
|--|--------------------------------------|-------|
| <b>Density</b>                                 | <i>lb/in<sup>3</sup></i>             | 0.60  |
|  | <i>gm/cm<sup>3</sup></i>             | 16.60 |
| <b>Melting Point</b>                           | <i>°F</i>                            | 5425  |
|  | <i>°C</i>                            | 2996  |
| <b>Thermal Conductivity</b>                    | <i>cal/cm<sup>2</sup>/cm°C/sec</i>   | 0.13  |
| <b>Specific Heat</b>                           | <i>Cal/gm/°C</i>                     | 0.036 |
| <b>Coefficient of Linear Thermal Expansion</b> | <i>micro-in/°F x 10<sup>-6</sup></i> | 6.50  |
|  | <i>micro-in/°C x 10<sup>-6</sup></i> | 3.60  |
| <b>Electrical Resistivity</b>                  | <i>micro-ohm-cm</i>                  | 12.40 |

## MECHANICAL PROPERTIES

|                              |                        |         |
|------------------------------|------------------------|---------|
| <b>Tensile Strength</b>      | <i>KSI(Mpa)-RT</i>     | 50(345) |
|                              | <i>KSI(Mpa)-500°C</i>  | 35(240) |
|                              | <i>KSI(Mpa)-1000°C</i> | 15(100) |
| <b>Elongation</b>            | <i>% in 1.0"</i>       | 20      |
| <b>Hardness</b>              | <i>DPH</i>             | 200     |
| <b>Modulus of Elasticity</b> | <i>KSI</i>             | 27,000  |
|                              | <i>Gpa</i>             | 185     |

## \* FORMS AVAILABLE

|                  |                 |
|------------------|-----------------|
| <b>Rod/Wire</b>  | 0.001" - 2.0"   |
| <b>Sheet</b>     | 0.005" - 0.187" |
| <b>Plate</b>     | 0.1875" - 0.50" |
| <b>Foil/Coil</b> | 0.010" - 0.062" |

*\*Not a standard stock item. Please call for delivery options.*

## SPECIFICATIONS

**AMS 7849**

**CHEMISTRY - Minimum %** 99.99



Ed Fagan Inc also specializes in locating exotic materials. So, if you can't locate that hard-to-find material you need... Put EFI's material locator service to work for you!

[www.material-locator.com](http://www.material-locator.com)

**THE MATERIALS YOU NEED,  
WHEN YOU NEED THEM**



toll free 800.348.6268  
[www.edfagan.com](http://www.edfagan.com)  
[sales@edfagan.com](mailto:sales@edfagan.com)



## Glass Sealing / Controlled Expansion Alloys / Electrical & Electronic Nickel

EFI provides the highest quality materials including materials from Carpenter Technology Corp.

### ASTM F15 Alloy:

aka Kovar, Pernifer 2918, NILO K & Dilvar P1

Coil/Strip, Sheet, Plate, Round Bar

### Invar 36:

aka Pernifer 36, NILO 36 & Invar Steel

Round Bar, Sheet, Plate

### Super Invar 32-5:

Round bar, Sheet, Plate

### 42/\*46/48/52 Alloy:

aka Pernifer 40, 46, 48 & 50;

NILO 42, 46, 48 & 50;

Glass Seal 42, 46, 48 & 50

Coil/Strip, Sheet, Plate, Round Bar

### Electronic Nickel

### 200/201/233/270:

Coil/Strip, Round Bar, Sheet

*\*Products listed in Italics are special order and not standard stock items. Please call for availability.*

## Soft Magnetic Alloys/ EMI Shielding & Laminations

EFI is a distributor of magnetic shielding alloys for the world's leading producer of these alloys – VDM Metals GmbH.

### EFI Alloy 79:

aka Magnifer 7904, Moly-Permalloy,

HyMu 80, Hypernom & Permalloy 80

Round Bar, Sheet, Coil/Strip

### EFI Alloy 50:

aka Magnifer 50, High Permeability 49 & Alloy 47-50

Round & Square Bar, Coil/Strip

### Carpenter VimVar Core Iron:

Round Bar

### Carpenter Hiperco 50:

Plate, Coil/Strip

### Carpenter Hiperco 50A:

Round Bar

### Radiometal 4550:

Round Bar, Coil/Strip

## Refractory Metals/Alloys

EFI is a stocking distributor of Molybdenum & Tungsten products, as well as many other refractory metals and alloys, providing the highest quality materials available.

### Molybdenum:

Round Bar, Sheet, Plate,

Threaded Rod & Nuts

*\*Foil/Coil/Strip, Wire*

### TZM Molybdenum Alloy:

Round Bar, Sheet, Plate

### Tungsten:

Round Bar, Plate, *\*Sheet, \*Wire*

### Tungsten Alloy:

Round Bar, *\*Sheet, \*Plate,*

*\*Shapes, \*Flat Blanks*

*\*Tantalum: Round Bar, Sheet*

*\*Niobium: Foil/Coil/Strip*

*\*Rhenium: Sheet*

*\*Products listed in Italics are special order and not standard stock items. Please call for availability.*

## METALS WE DISTRIBUTE

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

**JUST IN TIME DELIVERY:** All **standard stock** items can be **shipped within 24 hours** – and are often **shipped the same day**. For **special order** materials, EFI has long relationships with the manufacturers of these materials, so please contact a sales rep to discuss price and delivery options. All materials can be certified with shipment.

## SERVICES WE OFFER

Slitting, Shearing, Saw Cutting, Centerless Grinding, Water-jet Cutting, Laser Cutting, Custom Stocking Programs, Consignment Programs



Are you spending too much of your valuable time trying to locate specialty metals and materials? If you can't locate the hard-to-find materials you need, use EFI's Material Locator to source them for you.

[www.material-locator.com](http://www.material-locator.com)

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[sales@edfagan.com](mailto:sales@edfagan.com)  
international sales  
+44 (0) 1548 858 770

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