



**ED FAGAN INC.**

# Molybdenum

# Refractory Alloys



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## DESCRIPTION

Molybdenum's unique properties give rise to processes and applications in electronics, aerospace, nuclear and metal working industries which would not be possible with many of the more common metals and alloys. Some of the more interesting properties of Molybdenum relate to high temperature applications - high temperature strength, excellent thermal properties, good electrical conductivity, low coefficient of expansion and low vapor pressure at elevated temperatures.

## APPLICATIONS

In missile industry, nose cones, high temperature structural parts, nozzles, leading edges of control surfaces, support vanes, re-entry cones, heat radiation shields. In electronics, cathodes, magnetron end hats, x-ray tube components. In high temperature applications, furnace windings, structural furnace members, and containers for components exposed to high temperatures.

## PHYSICAL PROPERTIES

<b>Density</b>	<i>lb/in<sup>3</sup></i>	0.369
	<i>gm/cm<sup>3</sup></i>	10.30
<b>Melting Point</b>	<i>°F</i>	4760
	<i>°C</i>	2625
<b>Thermal Conductivity</b>	<i>cal/cm<sup>2</sup>/cm<sup>2</sup>C/sec</i>	0.35
<b>Specific Heat</b>	<i>Cal/g-°C</i>	0.061
<b>Coefficient of Linear Thermal Expansion</b>	<i>micro-in/°F</i>	4.90
	<i>micro-in/°C</i>	2.70
<b>Electrical Resistivity</b>	<i>microhm-cm</i>	5.17
<b>Recrystallization Temp.</b>	<i>°C</i>	1100

## MECHANICAL PROPERTIES

<b>Tensile Strength</b>	<i>KSI(Mpa)-RT</i>	150(1035)
	<i>KSI(Mpa)-500°C</i>	75(515)
	<i>KSI(Mpa)-1000°C</i>	25(175)
<b>Elongation</b>	<i>% in 1.0"</i>	-
<b>Hardness</b>	<i>DPH</i>	230
<b>Modulus of Elasticity</b>	<i>KSI</i>	45000
	<i>Gpa</i>	310

## FORMS AVAILABLE

<b>Rod: Clean &amp; Straight</b>	3.175mm - 50.80mm
<b>Rod: Centerless Ground</b>	1.016mm - 50.80mm
<b>Sheet: Electronic Grade</b>	0.254mm - 19.050mm
<b>Sheet: Furnace Grade</b>	0.254mm - 4.749mm
<b>Plate</b>	4.762mm - 25.40mm
<b>Threaded Rod/Nuts</b>	Various Sizes

## SPECIFICATIONS

**AMS 7800**



**CHEMISTRY - Minimum %** 99.95



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**



[www.edfagan.eu](http://www.edfagan.eu)  
[sales@edfagan.eu](mailto:sales@edfagan.eu)  
+44 (0) 1548 858 770



## Glass Sealing/ Controlled Expansion Alloys

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

### ASTM F15 Alloy:

aka Kovar & Pernifer 2918  
Coil/Strip, Sheet, Plate,  
Bar, Wire

### Invar 36:

Bar, Sheet, Plate

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

Coil/Strip, Sheet, Plate, Bar

### Electronic Nickel

### 200/201/233/270:

Coil/Strip, Rod, Sheet, Plate

## Soft Magnetic Alloys/ EMI Shielding & Laminations

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

### EFI Alloy 79: aka Magnifer 7904,

Moly-Permalloy & HyMu 80  
Sheet, Coil/Strip

### EFI 50:

aka Magnifer 50 & High Perm 49  
Bar, Coil/Strip

### Carpenter VimVar Core Iron:

Rod, Bar

### Carpenter Hiperco 50:

Coil/Strip, Billet

Radiometal 4550: Rod, 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:

Bar, Sheet, Plate, Coil/Strip

### TZM Molybdenum Alloy:

Sheet, Bar

### Tungsten:

Bar, Coil/Strip, Sheet

Tantalum: Sheet, Tubing

Niobium: Strip

Tungsten Alloy: Rod, Shapes

Rhenium: Sheet

## Hard-to-Find Special Purpose Metals, Alloys and Materials

Are you spending too much of your valuable time trying to locate suppliers of specialty metals and materials? Use EFI's Material Locator (see below) to source it for you so you can get back to doing what you do best.

- Coil/Strip
- Sheet
- Plate
- Rod
- Tube
- Pipe
- Wire

## JUST IN TIME DELIVERY

All standard stock items can be **shipped within 24 hours** – and are often **shipped the same day**. All materials are certified with shipment.

## METALS WE DISTRIBUTE

Titanium  
Zirconium

High Temperature Alloys  
Corrosion Resistant Alloys  
Stainless Steel

Copper – OFE, OFHC  
Brass & Bronze  
Beryllium Copper

## SERVICES WE OFFER

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



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