



ED FAGAN INC.

TZM Molybdenum

Refractory Alloys



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DESCRIPTION

Molybdenum TZM is an alloy of 0.50% Titanium, 0.08% Zirconium and 0.02% Carbon with the balance Molybdenum. TZM alloy is manufactured by either P/M or Arc Cast technologies and is of great utility due to its high strength/high temperature applications, especially above 2000°F.

TZM has a higher recrystallization temperature, higher strength, hardness and good ductility at room and elevated temperatures than unalloyed molybdenum. In addition, TZM exhibits good thermal conductivity, low vapor pressure, good corrosion resistance and is machinable.

APPLICATIONS

Structural furnace components; die inserts for casting aluminum; hot stamping tooling; rocket nozzles; electrodes.



Aluminum Die Casting



Rocket Nozzles

MECHANICAL PROPERTIES

Tensile Strength	KSI(Mpa)-RT	110(760)
Elongation	% in 1.0"	15
Hardness	DPH	220
Modulus of Elasticity	KSI	46000
	Gpa	320
Specific Heat	Cal/g-°C	0.073
Coefficient of Linear Thermal Expansion	micro-in/°F	2.50
	micro-in/°C	5.20
Electrical Resistivity	microhm-cm	6.85

SPECIFICATIONS

ASTM	B368 type 364
	B387 type 364
AMS	7817

FORMS AVAILABLE

Rod	6.350mm - 25.40mm
Sheet	0.762mm
Plate	4.749mm - 9.525mm

PHYSICAL PROPERTIES

Density	lb/in³	0.37
	gm/cm³	10.22
Melting Point	°F	4753
	°C	2623
Recrystallization Temp.	°C	1400

CHEMISTRY - Minimum % 99.20 Mo



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

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



www.edfagan.eu
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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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