



ED FAGAN INC.

Rhenium

Refractory Alloys



Unit 3a South Hams Business Park, Churchstow, Kingsbridge, Devon, TQ7 3QH
phone +44 (0) 1548 858 770 • fax +44 (0) 1548 856 516

DESCRIPTION

Among the highest density element and melting point, rhenium does not have a ductile to brittle transition temperature and does not form carbides. High resistivity, combined with low vapor pressure, it is an ideal material for filament applications. Excellent resistance to corrosion, resists acid attack and the mechanical effects of electrical erosion. Rhenium has a beneficial effect as an alloying addition with other refractory metals as it greatly enhances the ductility and tensile strength of these alloys.

APPLICATIONS

Mass spectrometer filaments; grid heaters; cathode cups; thermocouples; nuclear reactors; semiconductors.

PHYSICAL PROPERTIES

Density	<i>lb/in³</i>	0.77
	<i>gm/cm³</i>	21.20
Melting Point	<i>°F</i>	5767
	<i>°C</i>	3180
Thermal Conductivity	<i>cal/cm²/cm²C/sec</i>	0.39
Specific Heat	<i>Cal/gm/°C</i>	0.033
Coefficient of Linear Thermal Expansion	<i>micro-in/°F x 10⁶</i>	11.70
	<i>micro-in/°C x 10⁶</i>	6.50
Electrical Resistivity	<i>micro-ohm-cm</i>	13.5

MECHANICAL PROPERTIES

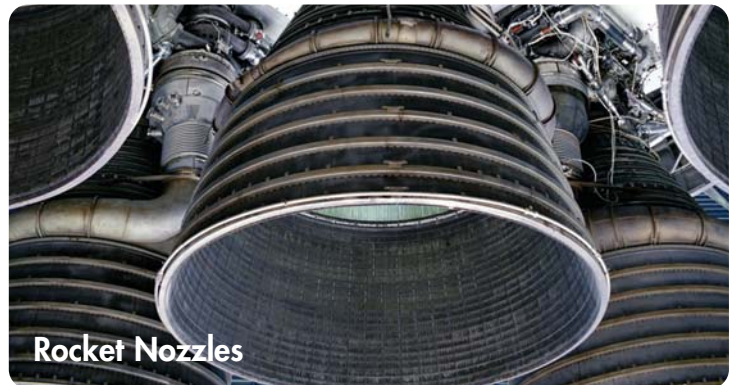
Tensile Strength	<i>KSI(Mpa)-RT</i>	200(1380)
	<i>KSI(Mpa)-500°C</i>	135(930)
	<i>KSI(Mpa)-1000°C</i>	70(480)
Elongation	<i>% in 1.0"</i>	2
Modulus of Elasticity	<i>KSI</i>	67150
	<i>Gpa</i>	463

FORMS AVAILABLE

Sheet Available from Mill
For other forms – Rod, Plate, Foil/Strip/Coil – please call us with your size, shape, form and quantity requirements for a material price quote.



Nuclear Applications



Rocket Nozzles

CHEMISTRY - Minimum % 99.97



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
sales@edfagan.eu
+44 (0) 1548 858 770

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ED FAGAN INC.

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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