

Re

186.207

Rhenium

# Rhenium

## Refractory Metals and Alloys

www.edfagan.com | sales@edfagan.com  
toll free 800.348.6268

### DESCRIPTION

Rhenium is represented with chemical element symbol Re and is noted for having the second highest boiling point and the third highest melting point of any of the elements. Rhenium is primarily obtained through the extraction and refinement of molybdenum and copper ores. 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. With its excellent resistance to corrosion, rhenium 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.

### TYPICAL PHYSICAL PROPERTIES

Density	lb/in <sup>3</sup>	0.77
	gm/cm <sup>3</sup>	21.20
Melting Point	°F	5767
	°C	3186
Electrical Resistivity	Micro-ohm-cm	13.5
Thermal Conductivity	W/M-K	51
Specific Heat	Cal/gm/°C	0.033
Coefficient of Linear Thermal Expansion	Micro-in/°F x 10 <sup>-6</sup>	6.7
	Micro-in/°C x 10 <sup>-6</sup>	3.7

### TYPICAL MECHANICAL PROPERTIES

Tensile Strength	KSI (MPa)-RT	200 (1380)
	KSI (MPa)-500 °C	135 (930)
	KSI (MPa)-1000 °C	70 (480)
Elongation	% in 1.0"	2
Modulus of Elasticity	KSI (GPa)	67 (483)

### FORMS | SIZES AVAILABLE FROM OUR MILL

Coil   Strip	0.001" - 0.100"
Plate	0.150" - 0.300"
Round Bar	0.100" - 4.000"
Sheet	0.001" - 0.100"

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.

### Chemical Processing



### CHEMISTRY %

99.97 Rhenium (Re) Minimum

### SPECIFICATIONS

CAS 7440-15-5

# Special Purpose Alloys & Metals From Stock

**efi** ED FAGAN INC.  
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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