75

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/in³ gm/cm³	0.77 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	Micro-in/°F x 10 ⁻⁶	6.7
Thermal Expansion	Micro-in/°C x 10 ⁻⁶	3.7

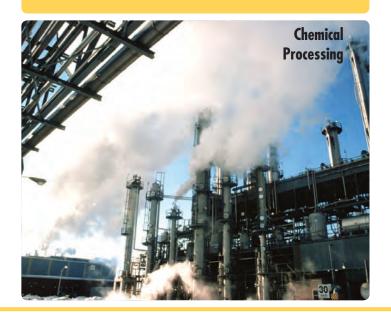
FORMS | SIZES AVAILABLE FROM OUR MILL

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.

TYPICAL MECHANICAL PROPERTIES

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



CHEMISTRY %

99.97 Rhenium (Re) Minimum

SPECIFICATIONS

CAS 7440-15-5

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10537 Humbolt Street, Los Alamitos, CA 90720
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Special Purpose Alloys & Metals From Stock



www.edfagan.com | sales@edfagan.com

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 arades of Nickel in various forms and sizes.

769 Susquehanna Avenue, Franklin Lakes, NJ 07417

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.