

Nb

92.90637

Niobium

Niobium

Refractory Metals and Alloys

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

DESCRIPTION

Niobium, also known as Columbium, is a shiny grey metal with a hardness similar to pure titanium and a ductility comparable to iron. Niobium is physiologically inert, hypoallergenic, and can be heated then anodized to produce iridescent colors making it desirable property for prosthetics, implants and jewelry. Niobium becomes a superconductor at cryogenic temperatures and has the greatest magnetic penetration depth of any element. Niobium oxidizes at temperatures above 400°C. The element's reactivity with oxygen requires it to be worked in a vacuum or inert atmosphere.

The majority of mined niobium is used as a microalloying element for steel. Also, niobium quantities, as great as 6.5%, are added to nickel, cobalt, and iron to produce superalloys.

APPLICATIONS

Capacitors, arc-tube seals of sodium vapor lamps, high voltage wire for receptor modules, nuclear reactors, superconducting magnets.

TYPICAL PHYSICAL PROPERTIES

Density	lb/in ³	0.31
	gm/cm ³	8.57
Melting Point	°F	4527
	°C	2497
Electrical Resistivity	Micro-ohm-cm	13.10
Thermal Conductivity	Cal/cm ² /cm°C /sec	0.35
Specific Heat	Cal/gm / °C	0.065
Recrystallization Temp	°C	800
Coefficient of Linear Thermal Expansion	Micro-in/ °F x 10 ⁻⁶	7.10
	Micro-in/ °C x 10 ⁻⁶	4.00

TYPICAL MECHANICAL PROPERTIES

Tensile Strength	KSI (MPa)-RT	40 (275)
	KSI (MPa)-500 °C	30 (205)
	KSI (MPa)-1000 °C	10 (70)
Elongation	% in 1.0"	30
Typical Hardness	DPH/RC	130
Modulus of Elasticity	KSI (GPa)	15 (105)

FORMS | SIZES AVAILABLE

Coil Strip	0.010" - 0.070"
Plate	0.187" - 1.000"
Round Bar	0.030" - 4.000"
Sheet	0.010" - 0.125"
Wire	0.001" - 0.250"

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.



CHEMISTRY %

99.6 Niobium (Nb) Minimum

SPECIFICATIONS

AMS 7850 ASTM B392, B393

Special Purpose Alloys & Metals From Stock

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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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