



ED FAGAN INC.

EFI Vim Var Core Iron Soft Magnetic Alloys



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DESCRIPTION

Carpenter VIM VAR Core Iron is a low carbon magnetic iron produced using vacuum induction melting plus vacuum arc remelting practices. Other elements commonly found in low carbon irons are held as low as possible to ensure good DC magnetic properties.

This double melting technique controls the distribution of nonmetallic inclusions to a minimum length and frequency so that thin wall sections will not contain leaks due to internal discontinuities.

APPLICATIONS

Carpenter VIM VAR Core Iron is often used in the manufacture of soft magnetic components where vacuum integrity is needed such as in power tubes and microwave devices. In addition, relays, solenoids, and magnetic pole pieces for scientific instruments may be made utilizing the qualities of VIM VAR Core Iron. AKA: Carpenter Consumet Core Iron.

TYPICAL DC MAGNETIC PROPERTIES

Saturation Induction - Gauss	21,500
Maximum Permeability	10,000
Coercive Force - Oersteds	1
Coercive Force - A/m	79.58

FORMS AVAILABLE

Rod 12.70mm - 260.35mm

SPECIFICATIONS

ASTM A848



PHYSICAL PROPERTIES

Density	lb/cu in	0.284
Specific Gravity		7.86
Curie Temp	°F	1400
	°C	760
Melting Point	°F	-
	°C	-
Electrical Resistivity	micro-ohm-cm	13
	ohm-cir mil/ft	78
Thermal Conductivity	W/cm °C	0.73
	BTU/lbm-°F	508
Thermal Expansion	ppm/°F(75°F to 842°F)	8.2
	ppm/°C(25°C to 450°C)	14.7
Specific Heat		0.11

TYPICAL AC MAGNETIC PROPERTIES

Core Loss W/lb @ 400Hz & 20k G N/A
B-40 Permeability @ 60Hz N/A

N/A = not a typical application value

MECHANICAL PROPERTIES

Tensile Strength	ksi	50
	MPa	345
Yield Strength	ksi	27
	MPa	190
Elongation	% in 2 in.	45
Typical Hardness	Rockwell	HRB 60
Modulus of Elasticity	Mpsi	30
	kMPa	207

CHEMISTRY - maximum % unless noted

Iron	99.8 nom	Silicon	0.12
Nominal Nickel	0.08	Vanadium	0.05
Nominal Cobalt	-	Niobium	-
Molybdenum	-	Phosphorus	0.01
Carbon	0.02	Sulfur	0.01
Manganese	0.12		



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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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 Hipercro 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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