

Tungsten Alloys

Refractory Metals and Alloys

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74

W

Tungsten

Cu Fe Ni

Copper Iron Nickel

The element Tungsten (W) is quite brittle and difficult to machine, but with the addition of nickel, copper and/or iron, a group of alloys are produced that are machinable with enhanced engineering properties. Designed to be used where a concentrated mass in a limited space is required, these heavy metal Tungsten Alloys are manufactured using powder metallurgy techniques to produce an alloy that is twice as heavy as steel and 50% more dense than lead. Overall their mechanical properties; hardness, tensile strength and ductility compare favorably to steel. These alloys also have an excellent oxidation resistance and can be plated or painted for enhanced corrosion protection.

APPLICATIONS

Tungsten Alloys have found wide acceptance in applications such as aircraft counterbalance weights, gyro weights, down hole well logging casings and weights for the oil and gas industry, high energy radiation shielding for the medical and nuclear industry.

EFINEA Grade	ASTM B77-15 Class	Nominal Tungsten (wt%)	Nominal Density g/cc	Min Yield Strength ksi(MPa)	Min Ultimate Tensile Strength ksi (MPa)	Min Elongation %	Modulus of Elasticity ksi (MPa)	Class Hardness Rockwell "C" Max
EFINEA 17	1	90	17	75(517)	110 (758)	5	45 (310)	32
EFINEA 17N	1	90	17	75(517)	94 (648)	2	45 (310)	32
EFINEA 75	2	92.5	17.5	75(517)	110 (758)	5	48 (331)	33
EFINEA 175N	2	92.5	17.5	75(517)	94 (648)	2	48 (331)	33
EFINEA 18	3	95	18	75(517)	105 (724)	3	50 (345)	34
EFINEA 18N	3	95	18	75(517)	94 (648)	1	50 (345)	34
EFINEA185	4	97	18.5	75(517)	100 (689)	2	52 (358)	35

Forms Available

Plate	-----
Parts Part Blanks	-----
Plate Sheet	-----
Shapes	-----

Airplane Counterweights**Balancing Weights****X-Ray Shielding**

Specifications

ASTM B77-15

Please call us at 800-348-6268 for delivery lead times. we can custom stock products in the size you require. No order is too small.

EFINEA METALS | www.efineametals.com | sales@efineametals.com

Special Purpose Alloys & Metal From Stock

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EFINEA Services

Slitting, Sheering, Grinding, Water Jet Cutting, Laser Cutting, Saw 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

Controlled Expansion | Glass Sealing

EFINEA Supplies the highest quality metals and alloys including materials from Carpenter Technology Corp.

Kovar® | ASTM F15® Alloy

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil

Trade Names: Kovar, Pernifer®, 2918, NILO® 42, DilverP1®

Alloy 42 / 46 / 48 / 52

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil

Trade Names: Pernifer® 40, 46, 48, 50, NILO® 42, 46, 48; Glass Sealing 42, 46, 48, 52

Free-Cut Invar "36"® Alloy

Forms: Round Bar/ Rod

Invar "36" Alloy

Forms: Plate Sheet

Trade Names: Pernifer® 36, NILO® 36, Invar

Super Invar 32-5®

Forms: Plate, Round Bar/Rod, Sheet

Refractory Metals & Alloys

EFINEA is your leading source for quality refractory metals & alloys. We stock DFARS Molybdenum, ML/MLS/MLR, Molybdenum TZM Tantalum & Tungsten manufactured from Plansee

Molybdenum

Forms: Plate, Round Bar/Rod, Sheet/Coiled Sheet, Threaded Rod/Nuts, Wire

Molybdenum Lanthanum Oxide (ML)

Forms: Sheet - Stress Relieved, Recrystallized

Molybdenum TZM

Forms: Plate, Round Bar/ Rod, Sheet

Niobium

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil

Rhenium

Forms: Plate, Round Bar/ Rod, Sheet, Strip/Coil

Tantalum

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil, Wire

Tungsten

Forms: Plate, Precision Cut wire, Round Bar/Rod, Sheet

Tungsten Alloys

Forms: Blanks, Flats, Parts, Plate/Sheet, Rod, Shapes

Soft Magnetic Alloys | EMI Shielding & Laminations

EFINEA is a distributor of "EMI shielding alloys" for VDM Metals GmbH the world's leading producer of these alloys.

EFINEA Alloy 50

Forms: Round Bar/Rod, Square Bar, Strip/Coil, Wire Rod

Trade Names: High Permeability 49®, Mangnifer® 50

EFINEA Alloy 79

Forms: Rectangular Bar, Round Bar/Rod, Sheet, Strip/Coil

Trade Names: Hipernom, HyMu80 Magnifer® 7904, Molypermalloy, Permalloy 80®

Hiperco® 50

Forms: Strip/Coil

Hiperco® 50A

Forms: Plate, Round Bar/Rod, Strip/Coil

Hiperco® 50 HS

Forms: Strip/Coil

Core Iron (Pure Iron)

Forms: Round Bar/Rod, Plate

Trade Names: Electrical Iron®, Alliedpureiron®

Electrical & Electronic Nickels

EFINEA supplies select, Commercially pure grades of Nickel in various forms and sizes.

Electronic Nickels

200/201/205/233/270

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil, Wire

Copper Metals

EFINEA supplies select, Commercially pure grades of Copper in Coil Form

Copper OFHC 101/102

Nickel-Silver 770

Cupro-Nickel 715 (CuNi 70/30)

Forms: Coil

Stainless Steels & Other Alloys

EFINEA supplies select aircraft quality grades of Stainless Steel available in various forms and sizes.

17-4PH (Type 630)

15-5PH Vac Melt

300 Grade Stainless Steel Coils

Forms: Round Bar/Coils