



MuMETAL® ROUND BAR

DESCRIPTION

MuMETAL® is a non-oriented 80% nickel-iron-molybdenum alloy which offers a saturation induction of about 0.75T (7500 G), low coercive forces, and extremely high initial permeability as well as maximum permeability with minimum hysteresis losses. MuMetal bar is used in magnetic shielding, current sensors, high precision current transformer cores, and ground fault circuit breaker (relay parts).

SPECIFICATIONS

MuMETAL® alloy meets ASTM-A-753 Alloy 4, and military specification MIL-N-14411Composition 1.

TYPICAL CHEMICAL COMPOSITION (WEIGHT %)		
Ni	Mo	Fe
79-82	3.5-6	Balance

DC MAGNETIC PROPERTIES ¹	
Coercivity (Hc)	< .020 Oe [<1.59 A/m]
Remanence, Br	4000 G
Maximum Permeability (μ_{max})	$\leq 400,000$

PHYSICAL PROPERTIES*	
Saturation Induction (Bs)	7,500 G [0.75 T]
Density	.316 lb/in ³ [8.74 g/cm ³]
Curie Temperature	788°F [420°C]
Electrical Resistivity	60 $\mu\Omega$ cm
Thermal Expansion	12×10^{-6} /°K
Thermal Conductivity	19 W/°Km
Specific Heat	460 J \times Kg ⁻¹ \times °K ⁻¹
Melting Temperature	2642°F [1450°C]

MECHANICAL PROPERTIES* (typical values on wrought product)	
Hardness (HB)	≥ 140
Tensile strength (MPa)	≥ 480
Yield strength (MPa)	≥ 200
Elongation in 2" (%)	≥ 20

¹ measured on final annealed ring samples.

*Note: All product data given in this data sheet are typical values based on the experience of the melt source. They are not part of material specification and do not guarantee particular characteristics.