MAGNETIC SHIELD CORP.

MuMETAL® STRESS ANNEALED SHEET

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 high quality 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, UNS N14080, DIN IEC 404, DIN 17745, DIN 17405, and military specification MIL-N-14411Composition 1.

TYPICAL CHEMICAL COMPOSITION (WEIGHT %)				
Ni	Mo	Fe	Mn	Si
80	5.0	Balance	0.3 – 0.5	0.1 – 0.4

DC MAGNETIC PROPERTIES[1]	
Coercivity (Hc)	.005 Oe [0.4 A/m]
Permeability at 0.005 Oe	≥400,000

AC (60 Hz) MAGNETIC PROPERTIES[1]	
Coercivity (Hc)	.005 Oe [0.4 A/m]
Permeability at 0.4 A/m	≥75,000

PHYSICAL PROPERTIES*	
Saturation Induction (Bs)	7,500 G (0.75 T)
Density	.316 lb/in³ [8.7 g/cm³]
Curie Temperature	788°F [420°C]
Electrical Resistivity	60 μΩcm
Thermal Expansion	12×10^{-6}/°K
Thermal Conductivity	19 W/°Km
Specific Heat	460 J × Kg^{-1} × $°K^{-1}$
Melting Temperature	2642°F [1450°C]

MECHANICAL PROPERTIES*	
Hardness (HV)	130-170
Tensile strength (MPa)	650
Yield strength (MPa)	280
Elongation in 2” (%)	35

[1] measured using stamped rings of 0.35 mm [.014”] sheet thickness after perfection annealing.

*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.

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