

# MAGNETIC SHIELD CORP.



## Co-NETIC® AA PERFECTION ANNEALED FOIL

### DESCRIPTION

Co-NETIC® is a non-oriented 80% nickel-iron-molybdenum alloy which offers a saturation induction of about 0.8T (8000 G), low coercive forces, and extremely high initial permeability as well as maximum permeability with minimum hysteresis losses. Co-NETIC is suitable for shielding sensitive electronic equipment against low strength, low frequency magnetic fields.

### SPECIFICATIONS

Co-NETIC® alloy meets ASTM-A-753 Alloy 4, UNS N14080, DIN IEC 404, DIN 17745 Material no. 2.4545, DIN 17405, and military specification MIL-N-14411 Composition 1.

TYPICAL CHEMICAL COMPOSITION (WEIGHT %)				
Ni	Mo	Fe	Mn	Si
80	4.9	Balance	0.5	0.3

DC MAGNETIC PROPERTIES <sup>1</sup>	
Coercivity (Hc)	.005 Oe [.4 A/m]
Maximum Permeability ( $\mu_{max}$ )	$\geq 400,000$
Permeability at flux density, B, of 40G	$\geq 100,000$

AC (50 Hz) MAGNETIC PROPERTIES <sup>1</sup>	
Coercivity (Hc)	.005 Oe [.4 A/m]
Maximum Permeability ( $\mu_{max}$ )	$\geq 150,000$
Permeability at 0.4 A/m	$\geq 80,000$

PHYSICAL PROPERTIES*	
Saturation Induction (Bs)	8,000 G [0.8T]
Density	.316 lb/in <sup>3</sup> [8.7 g/cm <sup>3</sup> ]
Curie Temperature	830°F [410°C]
Saturation magnetostriction	$+1 \times 10^{-6}$
Electrical Resistivity	55 $\mu\Omega\text{cm}$ [349 ohm circ mil/ft]
Mean coefficient of thermal expansion (20–100 °C)	$12 \times 10^{-6}/^\circ\text{K}$ [ $7 \times 10^{-6}/^\circ\text{F}$ ]
Thermal Conductivity	0.32 W/cm K [134 (BTU in)/(ft hr °F)]
Specific Heat	460 J $\times$ Kg <sup>-1</sup> $\times$ °K <sup>-1</sup>
Melting Temperature	2642°F [1450°C]

MECHANICAL PROPERTIES*	
Hardness (HV)	90-120
Tensile strength (MPa)	450
Yield strength (MPa)	170
Elongation in 2" (%)	30

<sup>1</sup> measured using toroidal core sample of 0.05 mm [.002"] 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.