Magfield 50

Nickel-Iron Soft-Magnetic Alloy

W.N.: 1.3922
DIN: Ni48
UNS: K94840

Magfield 50

Magfield 50 is a nickel-iron soft-magnetic alloy with Ni content about 48%.

Magfield 50 is characterized by high permeability and the highest possible saturation induction among nickel-iron soft-magnetic alloys.

Applications: relay, rotor and stator laminations, magnetic valves, shielding, gas safety, watches, sensors, transformers, transducers, memory cores, magnetic switches, chokes, etc.

1. Chemical composition

Nominal composition, %	C	P	S	Mn	Si	Ni	Fe
min	-	-	-	-	-	46.00	Bal.
max	0.03	0.02	0.02	0.60	0.30	49.00	

2. Mechanical properties

Condition	Yield Strength, $R_{p0.2}$ (MPa)	Tensile Strength, R_m (MPa)	Hardness, HV	Elongation, A (%)
soft, annealed	270	530	130	≥ 30

3. Magnetic properties

Saturation Bs, T	1.50
Coercivity Hc, A/m	≤11.20

Initial permeability $\mu_{0.40}$,mH/m	≥3.30
Maximum permeability μ_{max},mH/m	≥50.00

4. Physical properties

Density, g/cm^3	8.20
Electrical resistivity at 20°C, Ω mm^2/m	0.45
Thermal conductivity at 20°C, W/mk	15.00
Melting point, °C	1425
Curie point, °C	500

Coefficient of thermal expansion, 10^{-6}/K	100°C	8.90
	200°C	9.20
	300°C	9.10
	400°C	9.00
	500°C	9.40

5. Delivery form, dimensions, condition.

Form*	Thickness, mm	Width, mm	Length, mm	Finish
Strip/Coil	0.10-2.50	10.00 - 400.00	-	soft annealed / hard
Sheet	0.50-3.50	5.00 - 400.00	500.00 - 3500.00	soft anneled / hard

*Other dimensions and specifications upon request.

Note: All information enclosed in this datasheet is based on our best knowledge and is given as indicative. Other special requirements are subject to prior discussion and approval of Vojay. Please contact us for any additional information or request.