

MIM-Material Specification and Applications

Composition

Material: Nickel-Iron, nickel alloyed steel, soft magnetic

Standards: 50%NiFe, FN50, Fe50Ni, ~1.3921

Typical composition::	Element	Content (%)
	C	≤ 0.10
	Ni	49.0 – 50.0
	Mo	≤ 0.50
	Fe	Balance
	Other	-

Properties

	As sintered	HIP
Density	≥ 7.70 g/cm ³	≥ 8.15 g/cm ³
Hardness	≥ 100 HV1	≥ 120 HV1
Yield strength R _{p0.2}	≥ 120 MPa	≥ 140 MPa
Tensile strength R _m	≥ 400 MPa	≥ 420 MPa
Elongation A	≥ 25 %	≥ 25 %
Surface quality R _a	≤ 1.6 μm	≤ 1.6 μm
Max. Induction B _m	1.25 – 1.5 T	
Residual induction B _r	0.8 – 1.0 T	
Coercive force H _c	0.1 – 0.2 Oe	
Max. Permeability μ _{max}	27000 – 32000 G/Oe	
Specific electric resistivity	0.45 Ωmm ² /m	

Application / remarks

50%NiFe has a very high permeability. Maximum induction is slightly below that of Silicon-Iron, while the coercive field is markedly below that of Silicon-Iron. The soft magnetic material is used for magnetic poles, relay parts, rotors and stators.

The data given are based on our experience to date. However, no liability can be assumed.