

Injection Moulded Material Properties and Application Data

Material:	Nickel-Iron, soft magnetic	
Grade:	80% NiFe	
Nominal composition, %:	Ni	80.0
	C	0.01 max.
	Fe	Balance

Typical properties	as sintered	hipped
Density (g/cm ³)	8.30	8.70
Hardness, HV1	approx. 120	approx. 100
Elastic Modulus (GPa)	210	
Elongation (%)	26	
Yield Strength (MPa, N/mm ²)	140	
As Sintered Surface Finish	R _a < 1.6	
Coefficient of Expansion 20 – 100 °C	13.5 · 10 ⁻⁶ /K	
Specific Thermal Conductivity	17 – 19 W/km	

Magnetic and electric properties

Max. Induction, B _m	0.7 – 0.8 Tesla = Vs/m ²	7'000 – 9'000 G
Residual Induction, B _r	0.8 – 1.0 Tesla = Vs/m ²	3'000 – 5'000 G
Coercive Field, H _c	4.0 – 7.0 A/m	0.05 – 0.09 Oe
Max. Permeability, μ _{max}	0.0691 – 0.0754 Tm/A = Vs/Am	55'000 – 60'000 G/Oe
Curietemperatur	400 °C	
Specific Electric Resistance	0.55 Ωmm ² /m	

Use, remarks:

80% Ni-Fe has the highest permeability. The maximum induction is below that of 50% Ni-Fe, while the coercive field is markedly below that of 50% NiFe. The material is used for applications in LF and HF transmission, magnet heads etc.