

Alliance N-42 Neodymium Iron Boron Magnetic Material

Category : Metal , Electronic/Magnetic Alloy , Ferrous Metal , Ferritic

Material Notes:

Order this product through the following link:

http://www.lookpolymers.com/polymer_Alliance-N-42-Neodymium-Iron-Boron-Magnetic-Material.php

Physical Properties	Metric	English	Comments
Density	7.50 - 7.80 g/cc	0.271 - 0.282 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	570 - 580	570 - 580	
Tensile Strength, Ultimate	80.0 MPa	11600 psi	
Modulus of Elasticity	150 - 160 GPa	21800 - 23200 ksi	
Flexural Strength	180 - 270 MPa	26100 - 39200 psi	
Compressive Strength	850 - 1050 MPa	123000 - 152000 psi	

Thermal Properties	Metric	English	Comments
CTE, linear	5.00 $\mu\text{m}/\text{m}\cdot\text{°C}$	2.78 $\mu\text{in}/\text{in}\cdot\text{°F}$	Parallel DOM
	@Temperature 20.0 °C	@Temperature 68.0 °F	
CTE, linear, Transverse to Flow	-1.00 $\mu\text{m}/\text{m}\cdot\text{°C}$	-0.556 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Specific Heat Capacity	0.440 J/g-°C	0.105 BTU/lb-°F	
Thermal Conductivity	9.00 W/m-K	62.5 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	80.0 °C	176 °F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000120 - 0.000160 ohm-cm	0.000120 - 0.000160 ohm-cm	
Magnetic Coercive Force, Hc	11600 Oe	11600 Oe	
	12000 Oe	12000 Oe	Intrinsic
Magnetic Remanence, Br	13000 Gauss	13000 Gauss	
Magnetic Maximum Energy Product, BH	40 - 43 MGOe	40 - 43 MGOe	

Electrical Properties	Metric	English	Comments
Descriptive Properties		Value	Comments
Reversible Temp Coef., Bd		-0.12 %/°C	
Reversible Temp Coef., Hd		-0.60 %/°C	
Temperature Coefficient, Br		-0.11 %/°C	(20-100°C)
Temperature Coefficient, Hci		-0.72 %/°C	(20-100°C)

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