

## Alliance N-42SH 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-42SH-Neodymium-Iron-Boron-Magnetic-Material.php](http://www.lookpolymers.com/polymer_Alliance-N-42SH-Neodymium-Iron-Boron-Magnetic-Material.php)

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

| 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 <sup>2</sup> -°F            |              |
| Maximum Service Temperature, Air | 150 °C                                     | 302 °F  |              |

| Electrical Properties               | Metric                     | English                    | Comments  |
|-------------------------------------|----------------------------|----------------------------|-----------|
| Electrical Resistivity              | 0.000120 - 0.000160 ohm-cm | 0.000120 - 0.000160 ohm-cm |           |
| Magnetic Coercive Force, Hc         | 12300 Oe                   | 12300 Oe                   |           |
|                                     | 20000 Oe                   | 20000 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    |        | -0.11 %/°C |            |
| Reversible Temp Coef., Hd    |        | -0.55 %/°C |            |
| Temperature Coefficient, Br  |        | -0.11 %/°C | (20-100°C) |
| Temperature Coefficient, Hci |        | -0.72 %/°C | (20-100°C) |

## Contact Songhan Plastic Technology Co.,Ltd.

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