# VTEC™ PI

Thermoset Polyimide

RBI, Inc.

## Message:

High temperature resistance
Strength at elevated temperature
Superior mechanical properties
Very low thermal expansion coefficient
Excellent chemical resistance
Extremely low moisture absorption - 1/16th of Vespel SP-1
Extremely dimensionally stable
Equal thermal expansion in X, Y and Z directions
Easy machining and tolerance control - Compliant without deforming under load and temperature
Outstanding electrical properties
Wear resistance, low friction, self-lubricating
Non-abrasive to mating parts
High compressive strength and creep resistance
Very low outgassing
Zero metal and mineral extractables

| General Information | |
|---|---|
| Features | Good Chemical Resistance |
| | Good Compressive Strength |
| | Good Creep Resistance |
| | Good Dimensional Stability |
| | Good Electrical Properties |
| | Good Thermal Stability |
| | Good Wear Resistance |
| | High Heat Resistance |
| | Low Extractables |
| | Low Friction |
| | Low Moisture Absorption |
| | Low Temperature Strength |
| | Low to No Outgassing |
| | Machinable |
| | Self Lubricating |
| Forms | Customizable Forms |
| | Rod |
| | Sheet |
| | Tubing |

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Specific Gravity | 1.41 | g/cm³ | ASTM D792 |

| | | | |
|---|---|---|---|
| Water Absorption (Saturation) | < 0.10 | % | ASTM D570 |
| **Hardness** | **Nominal Value** | **Unit** | **Test Method** |
| Durometer Hardness (Shore D) | 86 | | ASTM D2240 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Strength | 89.3 | MPa | ASTM D638 |
| Tensile Elongation (Break) | 6.5 | % | ASTM D638 |
| Flexural Modulus | 3050 | MPa | ASTM D790 |
| Flexural Strength | 205 | MPa | ASTM D790 |
| Compressive Modulus | 2550 | MPa | ASTM D695 |
| Compressive Strength (10% Strain) | 251 | MPa | ASTM D695 |
| Coefficient of Friction (vs. Itself - Dynamic) | 0.35 | | |
| Deformation Under Load | 0.200 | % | ASTM D621 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Notched Izod Impact | 67 | J/m | ASTM D256 |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |
| CLTE - Flow | 4.5E-5 | cm/cm/°C | ASTM D696 |
| Thermal Conductivity | 0.039 | W/m/K | ASTM C177 |
| **Electrical** | **Nominal Value** | **Unit** | **Test Method** |
| Surface Resistivity | 1.0E+15 to 1.0E+16 | ohms | ASTM D257 |
| Volume Resistivity | 1.0E+16 to 1.0E+17 | ohms·cm | ASTM D257 |
| Dielectric Strength [1] (2.03 mm) | 23 | kV/mm | ASTM D149 |
| Dielectric Constant | | | ASTM D150 |
| 23°C, 1 MHz | 3.02 | | |
| 23°C, 1.00E+12 GHz | 2.90 | | |
| Dissipation Factor | | | ASTM D150 |
| 23°C, 1 MHz | 3.0E-3 | | |
| 23°C, 1.00E+12 GHz | 1.0E-3 | | |
| **Additional Information** | **Nominal Value** | **Unit** | **Test Method** |
| Abrasion Coefficient [2] | 2.46 | | Internal Method |
| Dimensional Stability, Shrinkage - 24 hrs (260°C) | 0.0 | % | |
| **NOTE** | | | |
| 1. | Method A (Short-Time) | | |
| 2. | cm3 sec x 10e5/(kg/m/hr) | | |



Recommended distributors for this material

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