Ensinger TECASINT™ 2021 Polyimide, Brown (PI)

Category : Polymer , Thermoplastic , Polyimide, Thermoplastic

Material Notes:

TECASINT™ 2000 series of polyimide stock shapes provide a superior combination of high temperature and bearing and wear, properties that make it an ideal choice for the most demanding applications. TECASINT™ 2011 is very pure, and exhibits low outgassing. It is also characterized by it's long term thermal stability, outstanding wear resistance, high creep resistance, and strength up to its continuous use temperature of 536° F. TECASINT™ 2021 contains 15% graphite and is also available for applications requiring improved wear resistance & lower coefficient of friction. Superior high temperature characteristics (TECASINT™ 2000 series can operate up to 536° F continuously)Excellent long-term thermal stabilityOutstanding bearing and wear properties (at elevated temperatures, TECASINT™ 2000 formulations offer superior wear rates)Excellent creep resistanceHigh strength and stiffness propertiesHigh purity characteristics (only extremely low levels of extractables and ionic impurities are apparent in TECASINT™ 2011)Good chemical resistance (TECASINT™ 2000 series is not attacked by common solvents or fuels and is acceptable for use in contact with many acids)TECASINT™ 2000 series with their superior physical properties, are ideal for applications in the aerospace, nuclear, automotive, electrical/electronics, and chemical processing industries. TECASINT™ shapes are excellent candidates for high purity applications in the semiconductor processing industry. Typical components produced from TECASINT™ applications include seals, thrust washers, bushings and wear pads in transportation/off-highway equipment, insulating and support elements in electrical welding and brazing equipment, and wafer-handling components in the harsh environment of semiconductor plasma ovens. Pump and valve seals, vanes, and piston rings are also commonly produced from TECASINT™ series materials.Information Provided by Ensinger Inc.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Ensinger-TECASINT-2021-Polyimide-Brown-PI.php

Physical Properties	Metric	English	Comments
Density	1.28 g/cc	0.0462 lb/in³	DIN 53 479
Water Absorption	1.62 % @Temperature 23.0 °C	1.62 % @Temperature 73.4 °F	24 hours in water; EN ISO 62
	3.12 % @Temperature 80.0 °C	3.12 % @Temperature 176 °F	24 hours in water; EN ISO 62

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	85 @Temperature 23.0 °C	85 @Temperature 73.4 °F	DIN 53 505
Tensile Strength	88.0 MPa @Temperature 23.0 °C	12800 psi @Temperature 73.4 °F	EN ISO 527
Elongation at Break	4.6 % @Temperature 23.0 °C	4.6 % @Temperature 73.4 °F	EN ISO 527

Mechanical Properties	Metric	English	Comments
	6.2 % @Temperature 23.0 °C	6.2 % @Temperature 73.4 °F	ongation; EN ISO 178
Tensile Modulus	2.60 GPa @Temperature 23.0 °C	377 ksi @Temperature 73.4 °F	EN ISO 527
Flexural Strength	131 MPa @Temperature 23.0 °C	19000 psi @Temperature 73.4 °F	EN ISO 178
Flexural Modulus	3.778 GPa @Temperature 23.0 °C	548.0 ksi @Temperature 73.4 °F	EN ISO 178
Compressive Yield Strength	137 MPa @Strain 10.0 %, Temperature 23.0 °C	19900 psi @Strain 10.0 %, Temperature 73.4 °F	EN ISO 604
Compressive Strength	447 MPa @Temperature 23.0 °C	64800 psi @Temperature 73.4 °F	EN ISO 604
Compressive Modulus	1.717 GPa @Temperature 23.0 °C	249.0 ksi @Temperature 73.4 °F	EN ISO 604
Charpy Impact Unnotched	2.47 J/cm² @Temperature 23.0 °C	11.8 ft-lb/in² @Temperature 73.4 °F	EN ISO 179
Charpy Impact, Notched	0.240 J/cm² @Temperature 23.0 °C	1.14 ft-lb/in² @Temperature 73.4 °F	EN ISO 179
Compression Set	57.6 % @Temperature 23.0 °C	57.6 % @Temperature 73.4 °F	Compression at Break; EN ISO 604

Thermal Properties	Metric	English	Comments
CTE, linear	47.0 µm/m-°C @Temperature 50.0 - 200 °C	26.1 µin/in-°F @Temperature 122 - 392 °F	DIN 53 752
	59.0 µm/m-°C @Temperature 200 - 300 °C	32.8 µin/in-°F @Temperature 392 - 572 °F	DIN 53 752
Specific Heat Capacity	0.980 J/g-°C	0.234 BTU/lb-°F	
Thermal Conductivity	0.230 W/m-K @Temperature 40.0 °C	1.60 BTU-in/hr-ft²-°F @Temperature 104 °F	ISO 8302
Maximum Service Temperature, Air	300 °C	572 °F	

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)			ISO 75-2/Af
Glass Transition Temp, Tg	370 °C	698 °F	DMTA

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm @Temperature 23.0 °C	1.00e+15 ohm-cm @Temperature 73.4 °F	IEC 60093
Surface Resistivity per Square	1.00e+15 ohm @Temperature 23.0 °C	1.00e+15 ohm @Temperature 73.4 °F	IEC 60093
Dielectric Constant	3.3 @Frequency 100000 Hz, Temperature 23.0 °C	3.3 @Frequency 100000 Hz, Temperature 73.4 °F	IEC 60250
	3.4 @Frequency 50.0 Hz, Temperature 23.0 °C	3.4 @Frequency 50.0 Hz, Temperature 73.4 °F	IEC 60250
	3.4 @Frequency 1.00 Hz, Temperature 23.0 °C	3.4 @Frequency 1.00 Hz, Temperature 73.4 °F	IEC 60250
	3.4 @Frequency 10000 Hz, Temperature 23.0 °C	3.4 @Frequency 10000 Hz, Temperature 73.4 °F	IEC 60250
Dielectric Strength	34.0 kV/mm @Temperature 23.0 °C	864 kV/in @Temperature 73.4 °F	ISO 60243-1
Dissipation Factor	0.0040 @Frequency 50.0 Hz, Temperature 23.0 °C	0.0040 @Frequency 50.0 Hz, Temperature 73.4 °F	DIN 53 482
	0.0040 @Frequency 1000 Hz, Temperature 23.0 °C	0.0040 @Frequency 1000 Hz, Temperature 73.4 °F	DIN 53 482
	0.0080 @Frequency 10000 Hz, Temperature 23.0 °C	0.0080 @Frequency 10000 Hz, Temperature 73.4 °F	DIN 53 482
	0.010 @Frequency 100000 Hz, Temperature 23.0 °C	0.010 @Frequency 100000 Hz, Temperature 73.4 °F	DIN 53 482

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