

## Ensinger TECASINT 4051 Polyimide, Beige, 30% Glass Fiber (PI)

Category : Polymer , Thermoplastic , Polyimide, Thermoplastic , Thermoplastic Polyimide, Glass Fiber

### Material Notes:

TECASINT is a range of non-melting high temperature polyimides characterized by high strength over a wide range of temperatures, good long term thermal stability, minimal thermal expansion and excellent wear resistance among other things. The TECASINT 2000 series offers these enhanced thermal properties along with lower moisture absorption, a higher degree of toughness, and better machining properties. TECASINT 2011 is unfilled, while TECASINT 2021 contains 15% graphite which offer improved wear resistance and a lower coefficient of friction. TECASINT 2000 series with their superior physical properties, are ideal for application in the aerospace, nuclear, automotive, electrical/electronics, and chemical processing industries. Main features: High thermal and mechanical capacity, very creep resistant, high gamma radiation resistance, very low water absorption, good chemical resistance, low coefficient of thermal expansion, easily machined to tight tolerances, very good electrical insulation, flame retardant according to UL94 V-0. Applications: Mechanical engineering, electronics, cryogenics, nuclear and vacuum technology, aircraft and aerospace industries, semiconductor technology, electrical engineering. Preferred Fields: Valve seating, switch parts, insulators, lead backer. Information Provided by Ensinger Sintimid

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[http://www.lookpolymers.com/polymer\\_Ensinger-TECASINT-4051-Polyimide-Beige-30-Glass-Fiber-PI.php](http://www.lookpolymers.com/polymer_Ensinger-TECASINT-4051-Polyimide-Beige-30-Glass-Fiber-PI.php)

Physical Properties	Metric	English	Comments
Density	1.65 g/cc	0.0596 lb/in <sup>3</sup>	DIN 53 479
Water Absorption	0.060 %	0.060 %	24 hours in water; EN ISO 62
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.26 %	0.26 %	24 hours in water; EN ISO 62
	@Temperature 80.0 °C	@Temperature 176 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	90	90	DIN 53 505
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Strength	77.0 MPa	11200 psi	EN ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Elongation at Break	1.2 %	1.2 %	EN ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Elongation at Yield	2.3 %	2.3 %	Flexural Elongation; EN ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Modulus	7.20 GPa	1040 ksi	EN ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	136 MPa Metric	19700 psi English	Comments
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Modulus	6.40 GPa @Temperature 23.0 °C	928 ksi @Temperature 73.4 °F	EN ISO 178
Compressive Yield Strength	193 MPa @Strain 10.0 %, Temperature 23.0 °C	28000 psi @Strain 10.0 %, Temperature 73.4 °F	EN ISO 604
Compressive Strength	259 MPa @Temperature 23.0 °C	37600 psi @Temperature 73.4 °F	EN ISO 604
Compressive Modulus	2.74 GPa @Temperature 23.0 °C	397 ksi @Temperature 73.4 °F	EN ISO 604
Charpy Impact Unnotched	1.97 J/cm <sup>2</sup> @Temperature 23.0 °C	9.37 ft-lb/in <sup>2</sup> @Temperature 73.4 °F	EN ISO 179
Charpy Impact, Notched	0.500 J/cm <sup>2</sup> @Temperature 23.0 °C	2.38 ft-lb/in <sup>2</sup> @Temperature 73.4 °F	EN ISO 179
Compression Set	42.8 % @Temperature 23.0 °C	42.8 % @Temperature 73.4 °F	Compression at Break; EN ISO 604

Thermal Properties	Metric	English	Comments
CTE, linear	38.0 μm/m-°C	21.1 μin/in-°F	DIN 53 752
	@Temperature 50.0 - 200 °C	@Temperature 122 - 392 °F	
	47.0 μm/m-°C	26.1 μin/in-°F	DIN 53 752
	@Temperature 200 - 300 °C	@Temperature 392 - 572 °F	
CTE, linear, Transverse to Flow	51.0 μm/m-°C	28.3 μin/in-°F	DIN 53 752
	@Temperature 50.0 - 200 °C	@Temperature 122 - 392 °F	
	70.0 μm/m-°C	38.9 μin/in-°F	DIN 53 752
	@Temperature 200 - 300 °C	@Temperature 392 - 572 °F	
Thermal Conductivity	0.400 W/m-K	2.78 BTU-in/hr-ft <sup>2</sup> -°F	ISO 8302
	@Temperature 40.0 °C	@Temperature 104 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.80e+16 ohm-cm	1.80e+16 ohm-cm	IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Surface Resistivity per Square	9.40e+16 ohm	9.40e+16 ohm	IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dielectric Constant	3.59	3.59	IEC 60250
	@Frequency 1000 Hz, Temperature 23.0 °C	@Frequency 1000 Hz, Temperature 73.4 °F	

## Contact Songhan Plastic Technology Co.,Ltd.

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