Ensinger RADEL® R-5500 Polyphenylsulfone (PPSU)

Category : Polymer , Thermoplastic , Polyphenylsulfone (PPSU)

Material Notes:

RADEL® R is a Polyphenysulfone produced by Solvay Advanced Polymers. RADEL® R is in the same performance category as products like Polysulfone and ULTEM® (PEI). RADEL® R has increased performance versus Polysulfone and ULTEM® in terms of temperature, impact strength and chemical resistance. RADEL® R has exceptional resistance to repeated steam autoclaving without loss of dimensional stability or physical properties. RADEL® R comes in both opaque and transparent grades. The transparent grade is R-5500 and the opaque grade is R-5100.High tensile strengthExcellent heat resistanceVery high resistance to environmental stressGreat mechanical strengthHigh dielectric strength and stabilityLow dissapation factorVery good mechinability and finishingAvailable in opaque and transparent gradesRADEL® R series products are targeted at a number of industries and applications. The initial target market is the medical industry. RADEL® R is used in applications for surgical tools and instruments because of its resistance to autoclave sterilization damage. A second market for RADEL® R is electronics because of its temperature resistance and dielectric properties.Information Provided by Ensinger Industries, Inc.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Ensinger-RADEL-R-5500-Polyphenylsulfone-PPSU.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.29 g/cc	1.29 g/cc	ASTM D792
Density	1.29 g/cc	0.0466 lb/in³	ASTM D792
Water Absorption	0.37 % @Temperature 22.8 °C, Time 86400 sec	0.37 % @Temperature 73.0 °F, Time 24.0 hour	ASTM D570
Water Absorption at Saturation	1.1 % @Temperature 22.8 °C	1.1 % @Temperature 73.0 °F	ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	123	123	ASTM D785
Tensile Strength, Yield	69.6 MPa @Temperature 22.8 °C	10100 psi @Temperature 73.0 °F	ASTM D638
Elongation at Break	60 % @Temperature 22.8 °C	60 % @Temperature 73.0 °F	ASTM D638
Tensile Modulus	2.34 GPa	340 ksi	ASTM D638
Flexural Strength	91.0 MPa @Temperature 22.8 °C	13200 psi @Temperature 73.0 °F	ASTM D790
	2.41 GPa	350 ksi	

Mechanical Properties	Metric	English	Comments
Flexural Modulus	@Temperature 22.8 °C	@Temperature 73.0 °F	ASTM D790
Compressive Strength	98.94 MPa	14350 psi	ASTM D695
Izod Impact, Notched	6.94 J/cm @Temperature 22.8 °C	13.0 ft-lb/in @Temperature 73.0 °F	ASTM D256

Thermal Properties	Metric	English	Comments
CTE, linear	30.6 µm/m-°C	17.0 µin/in-°F	ASTM D696
Specific Heat Capacity	1.13 J/g-°C	0.270 BTU/lb-°F	
Maximum Service Temperature, Air	182 °C	360 °F	Intermittent
Deflection Temperature at 0.46 MPa (66 psi)	220 °C	428 °F	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	216 °C	420 °F	ASTM D648
Vicat Softening Point	218 °C	424 °F	
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	ASTM D257
Dielectric Constant	3.44 @Frequency 60.0 Hz, Temperature 22.8 °C	3.44 @Frequency 60.0 Hz, Temperature 73.0 °F	50% RH; ASTM D150
Dielectric Strength	14.2 kV/mm	360 kV/in	ASTM D149

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