Solvay Specialty Polymers RadelÂ® R-5800 Polyphenylsulfone (PPSU)

Category : Polymer , Thermoplastic , Polyphenylsulfone (PPSU)

Material Notes:

RadelÂ® R-5800 is a high melt flow grade of RadelÂ® polyphenylsulfone (PPSU). It is especially well-suited for parts requiring long flow length with thin walls. RadelÂ® resins offer exceptional hydrolytic stability and toughness superior to other commercially-available, high-temperature engineering resins. They also offer high deflection temperatures and outstanding resistance to environmental stress cracking. RadelÂ® polymers are inherently flame retardant, provide excellent thermal stability and possess good electrical properties.Features: Acid Resistant; Autoclave Sterilizable; Base Resistant; Biocompatible; E-beam Sterilizable; Ethylene Oxide Sterilizable; Flame Retardant; Good Chemical Resistance; Good Sterilizability; Good Thermal Stability; Heat Sterilizable; High ESCR (Stress Crack Resist.); High Heat Resistance; Hydrolytically Stable; Radiation (Gamma) Resistant; Radiation Sterilizable; Radiotranslucent; Steam Resistant; Steam Sterilizable; Ultra High ToughnessUses: Aerospace Applications; Aircraft Applications; Automotive Applications; Dental Applications; Food Service Applications; Hospital Goods; Medical Devices; Medical/Healthcare Applications; Surgical InstrumentsAdditional Properties: Steam Sterilization - > 1000 CyclesAutomotive Specifications ASTM D6394 SP0313Information provided by Solvay Specialty Polymers.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Radel-R-5800-Polyphenylsulfone-PPSU.php

Physical Properties	Metric	English	Comments
Density	1.29 g/cc	0.0466 lb/inÂ³	ASTM D792
Water Absorption	0.37 % @Time 86400 sec	0.37 % @Time 24.0 hour	ISO 62
Water Absorption at Saturation	1.1 %	1.1 %	ASTM D570
Linear Mold Shrinkage, Flow	0.0070 cm/cm @Thickness 3.18 mm	0.0070 in/in @Thickness 0.125 in	
Melt Flow	20 - 28 g/10 min @Load 5.00 kg, Temperature 365 Â°C	20 - 28 g/10 min @Load 11.0 lb, Temperature 689 Â°F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Tensile Strength	69.6 MPa @Thickness 3.18 mm	10100 psi @Thickness 0.125 in	ASTM D638
Elongation at Break	60 - 120 % @Thickness 3.18 mm	60 - 120 % @Thickness 0.125 in	ASTM D638
Elongation at Yield	7.2 % @Thickness 3.18 mm	7.2 % @Thickness 0.125 in	ASTM D638
	2.34 GPa	339 ksi	

Mechanical Properties	Metric	English	Comments
Tensile Modulus	@Thickness 3.18 mm	@Thickness 0.125 in	ASTM D638
Flexural Strength	91.0 MPa @Strain 5.00 %, Thickness 3.18 mm	13200 psi @Strain 5.00 %, Thickness 0.125 in	ASTM D790
Flexural Modulus	2.41 GPa @Thickness 3.18 mm	350 ksi @Thickness 0.125 in	ASTM D790
Izod Impact, Notched	6.90 J/cm @Thickness 3.18 mm	12.9 ft-lb/in @Thickness 0.125 in	ASTM D256
Tensile Impact Strength	399 kJ/mÂ² @Thickness 3.18 mm	190 ft-lb/inÂ² @Thickness 0.125 in	ASTM D1822

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	56.0 Âµm/m-Â°C @Thickness 3.18 mm	31.1 Âµin/in-Â°F @Thickness 0.125 in	
Deflection Temperature at 1.8 MPa (264 psi)	207 Â°C @Thickness 3.20 mm	405 Â°F @Thickness 0.126 in	Unannealed; ASTM D648
Glass Transition Temp, Tg	220 Â°C	428 Â°F	ASTM E1356
Flammability, UL94	V-0 @Thickness 0.762 mm	V-0 @Thickness 0.0300 in	

Optical Properties	Metric	English	Comments
Refractive Index	1.672	1.672	ASTM D542

Electrical Properties	Metric	English	Comments
Volume Resistivity	9.00e+15 ohm-cm	9.00e+15 ohm-cm	ASTM D257
Dielectric Constant	3.44 @Frequency 6.00e+7 Hz	3.44 @Frequency 6.00e+7 Hz	ASTM D150
Dielectric Strength	15.0 kV/mm @Thickness 3.18 mm	381 kV/in @Thickness 0.125 in	ASTM D149
	>= 200 kV/mm @Thickness 0.0254 mm	>= 5080 kV/in @Thickness 0.00100 in	ASTM D149

Processing Properties	Metric	English	Comments
Melt Temperature	360 - 391 Â°C	680 - 736 Â°F	
Mold Temperature	138 - 163 Â°C	280 - 325 Â°F	
Drying Temperature	149 Â°C	300 Â°F	
	171 Â°C @Time 14400 sec	340 Â°F @Time 4.00 hour	

Descriptive Properties	Value	Comments
Agency Ratings	ISO 10993	
Availability	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Clear Amber; Colors	
Form	Pellets	
Processing Technique	Extrusion; Injection Molding	
	Sheet Extrusion; Thermoforming	
RoHS Compliance	RoHS Compliant	
Screw Compression Ratio	2.2:1.0	

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