

Quadrant EPP Radel® R PPSU

Polyphenylsulfone
Quadrant Engineering Plastic Products

Message:

Radel® R is an extruded form of polyphenylsulfone (PPSU) that offers higher impact resistance and has superior hydrolysis resistance than other amorphous materials, including both polysulfone and polyetherimide (PEI). It retains much of the thermal resistance, stability, and machinability of PEI. These properties make it ideal for medical applications requiring autoclaving.

General Information			
Features	Acid Resistant		
	Alkali Resistant		
	Autoclavable		
	Good Stability		
	Good Thermal Stability		
	High Impact Resistance		
	Hydrocarbon Resistant		
	Hydrolysis Resistant		
	Machinable		
Uses	Medical/Healthcare Applications		
Agency Ratings	FDA Unspecified Rating		
Processing Method	Extrusion		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.29	g/cm³	ASTM D792
Water Absorption			ASTM D570
24 hr	0.37	%	
Saturation	1.1	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	80		
R-Scale	120		
Durometer Hardness (Shore D)	80		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2340	MPa	ASTM D638
Tensile Strength (Ultimate)	75.8	MPa	ASTM D638
Tensile Elongation (Break)	30	%	ASTM D638
Flexural Modulus	2380	MPa	ASTM D790
Flexural Strength (Yield)	107	MPa	ASTM D790
Compressive Modulus	1930	MPa	ASTM D695
Compressive Strength (10% Strain)	92.4	MPa	ASTM D695
Shear Strength	62.1	MPa	ASTM D732

Wear Factor	2000	10 ⁻⁸ mm ³ /N·m	ASTM D3702
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	130	J/m	ASTM D256A
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	207	°C	ASTM D648
Maximum Use Temperature - Long Term, Air	149	°C	
Glass Transition Temperature	220	°C	ASTM D3418
CLTE - Flow ¹ (-40 to 149°C)	5.6E-5	cm/cm/°C	ASTM E831
Thermal Conductivity	0.35	W/m/K	ASTM F433
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity ²	> 1.0E+13	ohms	Internal Method
Dielectric Strength ³	14	kV/mm	ASTM D149
Dielectric Constant (1 MHz)	3.44		ASTM D150
Dissipation Factor (1 MHz)	1.7E-3		ASTM D150
Flammability	Nominal Value	Unit	Test Method
Flame Rating (3.18 mm, Estimated Rating)	V-0		UL 94
NOTE			
1.	68°F		
2.	EOS/ESD S11.11		
3.	Method A (Short-Time)		

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