

PPSU (Radel R 5500)

RADEL R polyphenylsulfone resins offer outstanding hydrolytic stability and toughness that is superior to other commercially available, high-temperature engineering resins. It has a high deflection temperature and exceptional resistance to environmental stress cracking. The polymer is inherently flame retardant, and it has excellent electrical and thermal properties.

Applications

PPSU (Radel R 5500) is ideal for medical technology and the pharmaceutical industry. It is commonly used in sterilizable instrument/surgical trays, other medical applications, and plumbing, food service, aircraft, and wire insulation applications.

Key Product Benefits

- Excellent Hydrolytic Stability
- High Toughness
- Flame Resistance
- Heat Resistance
- Chemical Resistance
- Biocompatible
- Resistant to Autoclaving

Properties

Property	Test Method	Value
Density	ASTM D792	1.29 g/cm ³
Water Absorption @ 24 hours	ASTM D570	0.37%
Water Absorption @ Saturation	ASTM D570	1.1%
Tensile Strength @ Yield	ASTM D638	11,000 psi
Tensile Modulus	ASTM D638	350,000-390,000 psi
Elongation @ Break	ASTM D638	30-80%
Flexural Strength	ASTM D790	15,500 psi
Flexural Modulus	ASTM D790	325,000-350,000 psi
Compressive Strength	ASTM D695	13,500-14,000 psi
Rockwell Hardness (M Scale)	ASTM D785	80-85
Coefficient of Linear Thermal Expansion	ASTM D696	3.1 × 10 ⁻⁵ in/in/°F

Property (Continued)	Test Method (Continued)	Value (Continued)
Continuous Service Temperature, Air		300-320°F
Heat Deflection Temperature @ 66 psi	ASTM D648	417°F
Heat Deflection Temperature @ 264 psi	ASTM D648	405-420°F
Flammability Rating	UL 94	V-0
Dielectric Strength	ASTM D149	360-380 V/mil
Dielectric Constant @ 60 Hz, 50% RH	ASTM D150	3.44