

**Tecason P - Radel® R5500
(Polyphenylsulfone - PPSU)**

RADEL® R is a Polyphenylsulfone 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 trans- parent grades. The transparent grade is R-5500 and the opaque grade is R-5100. Radel shapes are sold by Ensinger under the trade name TECASON P.

RADEL® R series products are targeted at a number of industries and applications. RADEL® R was initially target marketed for use in the medical industry for surgical tools and instruments because of its resistance to autoclave sterilization damage. A second market that developed for RADEL® R is electronics because of its temperature resistance and dielectric properties.

Advantages of RADEL® R

- **High tensile strength**
- **Excellent heat resistance**
- **Very high resistance to environmental stress**
- **Great mechanical strength**
- **High dielectric strength and stability**
- **Low dissipation factor**
- **Very good machinability and finishing**
- **Available in opaque and transparent grades**

Property	ASTM Test Method	Units	Tecason P Radel® R5500
Physical			
Density	D792	lbs/in ³	0.0466
Specific Gravity	D792	—	1.29
Water Absorption @24 hours	D570	%	0.37
Water Absorption @24 hours	D570	%	1.1
Mechanical			
Tensile Strength @ Yield	D638	psi	10,100
Tensile Modulus	D639	psi	340,000
Elongation @ Break	D638	%	60
Flexural Strength	D790	psi	13,200
Flexural Modulus	D790	psi	350,000
Compressive Strength	D695	psi	14,350
Izod Impact Strength	D256	ft-lb/in	13
Rockwell Hardness	D785	R Scale	R123

Property	ASTM Test Method	Units	Tecason P Radel® R5500
Thermal			
Heat Deflection Temperature @66 psi @264 psi	D648	°F	428
	D648	°F	420
Coefficient of Linear Thermal Expansion	D696	in/in/°F	1.7
Maximum Servicing Temperature Intermittent Long Term	—	°F	360
	UL746B	°F	—
Specific Heat	—	BTU/lb-°F	0.27
Thermal Conductivity	—	—	—
Vicat Softening Point	—	°F	424
Melting Point	D2133	°F	—
Flammability Rating	UL94	—	V-0
Electrical			
Surface Resistivity	D257	Ohm/square	—
Volume Resistivity	D257	ohm-cm	1 x 10 ¹⁵
Dielectric Strength	D149	V/mil	360
Dielectric Constant @60Hz, 50% RH @ 1MHz @20GHz @30GHz	D150	—	3.44
	D150	—	—
	D150	—	—
	D150	—	—
Dissipation Factor, @ 60Hz	D150	—	—

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.