

# Radel® R5500

(polyphenylsulfone)

Medical grade Radel R5500 resin offers exceptional hydrolytic stability, toughness, and superior impact strength over a wide temperature range. This product also offers high deflection temperatures and outstanding resistance to environmental stress cracking. Recommended sterilization techniques for Radel R5500 include EtO gas, radiation, steam autoclaving, dry heat and cold sterilization.

The following physical property information is based on typical values of the base Radel R5500 polyphenylsulfone resin.

	Units	ASTM Test	Result
<b>Mechanical</b>			
Compressive Modulus	psi	D695	251,000
Compressive Strength @yield	psi	D695	14,350
Flexural Modulus	psi	D790	350,000
Flexural Strength @yield	psi	D790	13,200
Izod Impact Strength			
Notched @73°F	ft•lbs/in	D256	10.0
Un-Notched	ft•lbs/in	D256	No Break
Tensile Elongation			
@break	%	D638	60.0-120.0
@yield	%	D638	7.2
Tensile Impact	ft•lbs/in <sup>2</sup>	D1822	190
Tensile Modulus	psi	D638	340,000
Tensile Strength @yield	psi	D638	10,100
<b>Thermal</b>			
Coefficient of Thermal Expansion	in/in/°F	D696	3.1x10 <sup>-5</sup>
Flammability Rating-UL94 @.031"	—	—	V-0
Heat Deflection Temperature			
@66 psi	°F	D648	417
@264 psi	°F	D648	405
Thermal Conductivity	(BTU•in)/(hr•ft <sup>2</sup> •°F)	C177	2.42
<b>Other</b>			
Steam sterilization cycles passed without cracking*, crazing or rupture:			>2,000
Specific Gravity	—	D792	1.29
Water Absorption @24 hours	%	D570	0.37

\* Steam autoclave conditions: temperature 270°F (132°C); time 30 minutes/cycle; steam pressure 27 psig (0.19 mPa); stress level 1,000 psi (7.0 mPa) in flexure; additive - Morpholine at 50 ppm.

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## Westlake Product Bulletin



### Applications Include:

- Provisional trials
- Instrument handles
- Medical device components

### Advantages of Medical Grade Radel R5500:

- Lot controlled and traceable
- Resin meets the requirements of USP Class VI specifications
- Superior dimensional stability
- Outstanding impact resistance
- Stress relieved
- Withstands repeated autoclaving
- Laser markable

### Manufacturing Capabilities:

#### Standard:

**Rod:** 1" to 3 1/2" diameter (off-white)  
1" to 2" diameter (black)  
(1/2" increments)

**Rod lengths:** 1" to 2" dia. - 96"  
2 1/2" to 3 1/2" dia. - 48"

#### Non-Standard:

**Rod:** 1/4" to 8" diameter  
**Sheet:** .035" to .220" thick  
**Slab:** 3/8" to 4" thick  
**Film:** .001" to .029" thick

### Colors/Grades:

Standard: off-white, black

\*In addition to our standard capabilities, Westlake also has the ability to process custom resins in various sizes and colors with some exceptions.

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