Radel® is a high performance thermoplastic which offers better impact and chemical resistance than polysulfone or polyetherimide (Ultem®). Radel® has exceptional toughness and outstanding hydrolysis resistance when compared to other thermoplastics as measured by steam autoclaving cycles to failure. Because Radel® has the ability to withstand a virtually unlimited number of steam sterilizations; it typically is used for medical devices without loss of dimensional stability or physical properties. Radel® also resists common acids and bases—including commercial washing solutions—over a broad temperature range. Its heat deflection temperature is 405°F. Radel® is FDA, USDA and USP Class VI compliant.

**Benefits**
- High HDT of 207°C (405°F)
- Toughness and impact strength
- Exceptional long-term hydrolytic stability
- Chemical resistance
- Withstands steam sterilization without any significant loss of properties
- Inherently flame retardant
- Transparent

**Applications**
- Sterilization cases and trays
- Dental and surgical instruments
- Medical devices
- Aircraft interiors
- Airline catering trolleys
- Hot water fittings

**TYPICAL PROPERTIES of RADEL® A POLYPHENYLXSULFONE**

<table>
<thead>
<tr>
<th>ASTM or UL test</th>
<th>Property</th>
<th>unfilled</th>
<th>30% glass filled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(A-300)</td>
<td>(AG-330)</td>
</tr>
</tbody>
</table>

**PHYSICAL**
- D792 Density (lb/in³) (g/cm³)
  - 0.050 (1.37)
  - 0.057 (1.58)
- D570 Water Absorption, 24 hrs (%)
  - 0.54
  - 0.39

**MECHANICAL**
- D638 Tensile Strength (psi)
  - 12,200 (18,900)
- D638 Tensile Modulus (psi)
  - 385,000 (825,000)
- D638 Tensile Elongation at Yield (%)
  - 6.5
  - 1.9
- D790 Flexural Strength (psi)
  - 16,100 (23,500)
- D790 Flexural Modulus (psi)
  - 420,000 (950,000)
- D695 Compressive Strength (psi)
  - 14,500 (25,600)
- D695 Compressive Modulus (psi)
  - 388,000 (1,190,000)
- D785 Hardness, Rockwell
  - M88/R127
  - M80/R124
- D256 IZOD Notched Impact (ft-lb/in)
  - 1.6
  - 1.4

**THERMAL**
- D696 Coefficient of Linear Thermal Expansion (x 10⁻⁵ in./in./°F)
  - 2.7
  - 1.7
- D648 Heat Deflection Temp (°F / °C) at 264 psi
  - 400 / 204
  - 420 / 215
- D3418 Melting Temp (°F / °C)
  - -
  - -
- D177 Max Operating Temp (°F / °C)
  - 320 / 160
  - 320 / 160
- C177 Thermal Conductivity (BTU-in/ft²-hr-°F)
  - (x 10⁻⁴ cal/cm-sec-°C)
  - 1.13
  - 1.35
  - 3.89
  - 4.65
- UL94 Flammability Rating
  - V0
  - V0

**ELECTRICAL**
- D149 Dielectric Strength (V/mil) short time, 1/8" thick
  - 380
  - 440
- D150 Dielectric Constant at 1 KHz
  - 3.5
  - 4.1
- D150 Dissipation Factor at 1 KHz
  - 0.0022
  - 0.0018
- D257 Volume Resistivity (ohm-cm) at 50% RH
  - 1.7 x 10¹⁵
  - > 10¹⁶

**SHAPEs AVAILABLE**
- Sheet
- Rod

**NOTES**
- 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.
## TYPICAL PROPERTIES of RADEL® A POLYPHENYLSPHONFONE

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