

## Radel\* R

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.

| Property                                     | Method         | Unit                           | Value                   |
|--|----------------|--------------------------------|-------------------------|
| <b>Mechanical</b>                            |                |                                |                         |
| Specific Gravity, 73°F                       | D792           |                                | 1.29                    |
| Tensile Strength, 73°F                       | D638           | psi                            | 11,000                  |
| Tensile Modulus of Elasticity, 73°F          | D638           | psi                            | 340,000                 |
| Elongation, 73°F                             | D638           | %                              | 30.0                    |
| Flexural Strength, 73°F                      | D790           | psi                            | 15,500                  |
| Flexural Modulus, 73°F                       | D790           | psi                            | 345,000                 |
| Shear Strength, 73°F                         | D732           | psi                            | 9,000                   |
| Compressive Strength, 10% Def., 73°F         | D695           | psi                            | 13,400                  |
| Compressive Modulus of Elasticity, 73°F      | D695           | psi                            | 280,000                 |
| Hardness, Rockwell, Scale as noted, 73°F     | D785           |                                | M80 (R120)              |
| Hardness, Durometer, Shore D scale, 73°F     | D2240          |                                | D80                     |
| Izod Impact (notched), 73°F                  | D256 Type A    | ft-lb/in                       | 2.5                     |
| Limiting PV, 73°F                            | PTM55007       | psi-fpm                        | 1,000                   |
| k (wear) factor                              | PTM55010       |                                | 1,000                   |
| <b>Thermal</b>                               |                |                                |                         |
| Coefficient of linear Thermal Expansion      | E-831(TMA)     | in/in/°F                       | 3.10 x 10 <sup>-5</sup> |
| Deflection Temperature 264 psi               | D648           | °F                             | 405                     |
| Tg-Glass Transition (amorphous)              | D3418          | °F                             | 428                     |
| Continuous Service Temperature in Air (Max.) |                | °F                             | 300                     |
| Thermal Conductivity                         |                | BTU-in/(hr-ft <sup>2</sup> °F) | 2.40                    |
| <b>Electrical</b>                            |                |                                |                         |
| Dielectric Strength, Short Term              | D149(2)        | Volts/mil                      | 360                     |
| Surface Resistivity                          | EOS/ESD S11.11 | Ohm/square                     | >10 <sup>13</sup>       |
| Dielectric Constant, 10 <sup>6</sup> Hz      | D150(2)        |                                | 3.44                    |
| Dissipation Factor, 10 <sup>6</sup> Hz       | D150(2)        |                                | 0.001                   |

**For additional information about our products call 1-800-366-0300 or via e-mail at [select.support@qplas.com](mailto:select.support@qplas.com)**

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# Product Data Sheet



## Radel\* R

| Property  | Method | Unit | Value              |
|---|--------|------|--------------------|
| <b>Chemical</b>   |        |      |                    |
| Acids, Weak, 73°F/23°C, acetic acid, dilute hydrochloric or sulfuric    |        |      | Acceptable Service |
| Acids, Strong, 73°F/23°C, conc. hydrochloric or sulfuric                |        |      | Limited Service    |
| Alkalies, Weak, 73°F/23°C, dilute ammonia or sodium hydroxide           |        |      | Acceptable Service |
| Alkalies, Strong, 73°F/23°C, conc. ammonia or sodium hydroxide          |        |      | Acceptable Service |
| Hydrocarbons-Aromatic, 73°F/23°C, benzene, toluene                      |        |      | Limited Service    |
| Hydrocarbons-Aliphatic, 73°F/23°C, gasoline, hexane, grease             |        |      | Acceptable Service |
| Ketones, Esters, 73°F/23°C, acetone, methyl ethyl ketone                |        |      | Unacceptable       |
| Ethers, 73°F/23°C, diethyl ether, tetrahydrofuran                       |        |      | Limited Service    |
| Chlorinated Solvents, 73°F/23°C, methylene chloride, chloroform         |        |      | Unacceptable       |
| Alcohols, 73°F/23°C, methanol, ethanol, anti-freeze                     |        |      | Limited Service    |
| Inorganic Salt Solutions, 73°F/23°C, sodium chloride, potassium cyanate |        |      | Acceptable Service |
| Continuous Sunlight, 73°F/23°C  |        |      | Limited Service    |
| <b>Miscellaneous</b>  |        |      |                    |
| Water Absorption Immersion, 24 hr                                       | D570   | %    | 0.37               |
| Water Absorption Immersion, Sat.  | D570   | %    | 1.10               |
| Outgassing TML (Total Mass Loss)  | E595   | %    | 1.00               |
| CVCM (Collected Volatile Condensable Material)                          | E595   | %    | 0.00               |
| WVR(Water Vapor Regained)   | E595   | %    | 0.70               |
| <b>Compliance</b>   |        |      |                    |
| UL94  |        |      | V-0                |
| USP Class VI  |        |      | Yes                |

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