

TECHNICAL DATA SHEET

Polysulfone

(PSU)

Is semitransparent, heat-resistant and offers excellent mechanical, electrical and chemical resistance. Polysulfone properties remain relatively consistent over a broad range of temperatures, from -150°F to 300°F, and this material is suitable for applications where autoclavability is required. The product remains stable and resists creep and deformation under continuous load and elevated temperatures. Polysulfone resists hydrolysis even under continuous use in hot water and steam at temperatures up to 300°F. It offers good resistance to detergents, hot water and steam and has excellent radiation stability.

TYPICAL PROPERTIES of Polysulfone UDEL®

| ASTM or UL test | Property | Udel® |
|-------------------|---|----------------------|
| PHYSICAL | | |
| D792 | Density (lb/in ³) (g/cm ³) | 0.045 1.24 |
| D570 | Water Absorption, 24 hrs (%) | 0.3 |
| MECHANICAL | | |
| D638 | Tensile Strength (psi) | 10,200 |
| D638 | Tensile Modulus (psi) | 360,000 |
| D638 | Tensile Elongation at Yield (%) | 30 |
| D790 | Flexural Strength (psi) | 15,000 |
| D790 | Flexural Modulus (psi) | 400,000 |
| D695 | Compressive Strength (psi) | 13,000 |
| D695 | Compressive Modulus (psi) | 375,000 |
| D785 | Hardness, Rockwell | M82 / R128 |
| D256 | IZOD Notched Impact (ft-lb/in) | 1.3 |
| THERMAL | | |
| D696 | Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F) | 3.10 |
| D648 | Heat Deflection Temp (°F / °C) at 264 psi | 340 / 171 |
| D3418 | Glass Transition Temp (°F / °C) | 374 / 190 |
| - | Max Operating Temp (°F / °C) | 300 / 149 |
| C177 | Thermal Conductivity (BTU-in/ft ² -hr-°F) (x 10 ⁻⁴ cal/cm-sec-°C) | - - |
| UL94 | Flammability Rating | HB |
| ELECTRICAL | | |
| D149 | Dielectric Strength (V/mil) short time, 1/8" thick | 425 |
| D150 | Dielectric Constant at 1 MHz | 3.14 |
| D150 | Dissipation Factor at 1 MHz | 0.0008 |
| D257 | Volume Resistivity (ohm-cm) at 50% RH | 5 x 10 ¹⁶ |

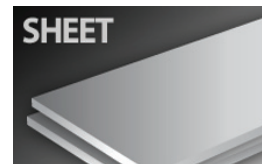
Benefits

- Autoclavable
- Resistance to hydrolysis
- Radiation stability
- Hot water and steam performance to 300° F
- Broad temperature range
- FDA compliant

Applications

- Medical devices
- Analytical instrumentation
- Semiconductor equipment
- Dairy connector
- Manifolds
- Steam cleaning equipment

SHAPES AVAILABLE



UDEL is a registered trademark of Solvay Advanced Polymers.

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.