

General Information

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| Chemical Designation: | <i>PPSU is an amorphous high performance thermoplastic offering better impact resistance and chemical resistance than polysulfone and polyetherimide (Ultem® PEI). Its natural color is (bone) white but is available in colors on a custom run basis. PPSU offers superior hydrolysis resistance when compared to other amorphous thermoplastics as measured by steam autoclaving cycles to failure. PPSU has virtually unlimited steam sterilizability. This makes it an excellent choice for medical devices where steam autoclaves used for sterilization. It also resists common acids and bases over a broad temperature range.</i> |
| <i>PPSU (Polyphenylsulfone)</i> | |
| Fillers: | |
| <i>Unfilled</i> | |
| Color: | <i>PPSU is commonly used in sterilization trays, dental and surgical instrument handles and in fluid handling coupling and fitting applications. It is suitable for use in electronic assembly equipment and devices that must withstand soldering temperatures.</i> |
| <i>Tan or Black</i> | |
| Specific Gravity: | |
| 1.29 | |

Technical Information

| Specification | Test | Value | Units |
|---|-------------|---|-------------------------|
| Specific Gravity, 73°F | D792 | 1.29 | - |
| Tensile Strength @ Yield, 73°F | D638 | 11,500 | psi |
| Tensile Modulus of Elasticity, 73°F | D638 | 340,000 | psi |
| Tensile Elongation (at break), 73°F | D638 | 60 | % |
| Flexural Strength, 73°F | D790 | 13,500 | psi |
| Flexural Modulus of Elasticity | D790 | 350,000 | psi |
| Shear Strength, 73°F | D732 | 9,000 | psi |
| Compressive Strength – Ultimate | | | psi |
| Compressive Strength at 2% Deformation | D695 | 2000 | psi |
| Compressive Strength at 10% Deformation | D695 | 14,350 | psi |
| Deformation Under Load | | | % |
| Compressive Modulus of Elasticity, 73°F | D695 | 234,000 | |
| Compressive Strength to Laminate (Modulus) | | | psi |
| Compressive Strength to Laminate (Yield) | | | psi |
| Compressive Strength to Laminate (Ultimate) | | | psi |
| Hardness, Durometer (Shore "D" scale) | D2240 | | |
| Hardness, Rockwell (Scale as noted) | D785 | M96 (R120) | Rockwell M/R |
| Izod Impact, Notched @ 73°F | D256 Type A | 3.0 | ft.lbs/in. of notch |
| Coefficient of Friction (Dry vs Steel) Static | PTM55007 | | |
| Coefficient of Friction (Dry vs Steel) Dynamic | PTM55007 | - | |
| Maximum Static Bearing Load (P) | PTM55007 | | psi |
| Maximum Unlubricated No Load Bearing Velocity (V) | PTM55007 | | ft/minute |
| Maximum Limiting PV (Unlubricated) | PTM55007 | - | psi x ft/min. |
| Wear Factor "K" x 10-10 | PTM55010 | >1,000 | Cubic in.-min/ft.lbs.hr |
| Sand Wheel Wear/Abrasion Test | | | UHMW=100 |
| Minimum Mating Surface Hardness | | | Rockwell (Brinnell) |
| Coefficient of Linear Thermal Expansion | E-831(TMA) | 3.10 | in/in/°F x 10-5 |
| Coefficient of Thermal Expansion // to Laminates | E-831(TMA) | 3.10 | in/in/°F x 10-5 |
| Coefficient of Thermal Expansion I to Laminates | E-831(TMA) | 3.10 | in/in/°F x 10-5 |
| Softening Point | | | °F |
| Heat Deflection Temperature 264 psi | D648 | 405 | °F |
| Embrittlement Temperature | | | °F Min. |
| Continuous Service Temperature in Air | | 300 | °F Max. |
| Short Term Service Temperature | | 360 | °F Max. |
| Tg-Glass Transition (Amorphous) | D3418 | 428 | °F |
| Melting Point (Crystalline) Peak | D3418 | N/A | °F |
| Thermal Conductivity | F433 | 1.74 | BTU-in/(hr/ft²°F) |
| Dielectric Strength Short Term | D149 | 360 | Volts/mil |
| Surface Resistivity | D257 | | ohm/cm |
| Volume Resistivity | D257 | 9x10 ¹⁵ | ohm/cm |
| Dielectric Constant, 60 Hz | D150 | 3.44 | |
| Dissipation Factor, 106 Hz | D150 | 0.0017 | |
| Flammability @ 3.1mm(1/8 in.) UL94 | UL94 | V-O | |
| Arc Resistance | | | seconds |
| Water Absorption, Immersion 24 Hours | D570 (2) | .37 | % |
| Water Absorption, Immersion Saturation | D570 (2) | 1.10 | % |
| Machinability Rating | | 3 | 1=easy, 10=difficult |
| Rod Diameter Availability (Off the Shelf) | | .50-3.0 | inches |
| Sheet Thickness Availability (Off the Shelf) | | .25-2.5 | inches |
| Characteristics / Attributes | | High Resistance to Steam Autoclaving / Impact Resistant | |

Thank you for your interest in our materials. All statements, technical information and recommendations presented are in good faith, based upon tests believed to be reliable and practical field experience. Poly-Tech is not responsible for its accuracy or completeness. It is our recommendation and the customer's responsibility to determine the suitability of any material for any given application.