



UNIFONE[®] PSU

UNIFONE PSU (Polysulfone) is an amorphous high performance thermoplastic material that has proven performance at elevated temperatures. Good mechanical properties along with thermal stability allow for its use in load bearing applications over broad temperature ranges. Other notable attributes include flame retardance, excellent radiation resistance, and good chemical resistance. The ability of UNIFONE PSU to withstand common sterilization techniques supports its use in numerous sanitary applications such as medical instruments and food processing machinery.

Nytec Plastic's UNIFONE PSU stock shapes are amber in color and semi-transparent. They machine easily and are available in a full range of heavy gauge rod, plate and tubular bar sizes.

PRODUCT ATTRIBUTES

- 320°F continuous use temperature
- Excellent strength and rigidity, even at elevated temperatures
- High impact resistance
- Low moisture absorption
- Chemically resistant to many acids and solvents
- Superior electrical properties
- Rated UL V-0
- Gamma radiation resistance
- Easily machined and fabricated

INDUSTRIES

- Medical
- Pharmaceutical manufacturing
- Aircraft and aerospace
- Appliance manufacturing
- Electrical and electronics manufacturing
- Food processing

APPLICATIONS

- Manifolds
- Electrical insulators, connectors, and components
- Aircraft instrumentation
- Medical instruments and instrument trays
- Sensors and analytical instruments
- Microwave cookware

Nytec Plastics, Ltd. is dedicated to supplying our customers with the highest quality thermoplastic stock shapes for machining. We manufacture and stock a full line of thermoplastic materials in a wide variety of rod, plate and tubular bar sizes. In addition, we offer over 35 years of experience in the custom extrusion of application-specific and proprietary resins to meet even the most demanding performance requirements. Nytec Plastics offers full technical support for all products and is certified to ISO 9002 standards for the manufacture of extruded plastics stock shapes.



UNIFONE® PSU POLYSULFONE

| Property | Test Method | Units | UNIFONE® PSU Polysulfone |
|--|-------------|--------------|--------------------------|
| Mechanical | | | |
| Specific Gravity | ASTM-D792 | — | 1.24 |
| Tensile Strength | ASTM-D638 | psi | 10,200 |
| Tensile Elongation | ASTM-D638 | % | 30 |
| Tensile Modulus of Elasticity | ASTM-D638 | psi | 360,000 |
| Flexural Strength | ASTM-D790 | psi | 15,400 |
| Flexural Modulus of Elasticity | ASTM-D790 | psi | 390,000 |
| Izod Notched Impact | ASTM-D256 | ft.-lbs./in. | 1.3 |
| Rockwell Hardness | ASTM-D785 | M scale | M82 |
| Thermal | | | |
| Coef. of Linear Thermal Expansion | ASTM-D696 | in./in./°F | 3.2 x 10 ⁻⁵ |
| Max. Continuous Use Temp. | Nytec std. | °F | 320 |
| Heat Deflection Temp. @ 264 psi | ASTM-D648 | °F | 345 |
| Glass Transition Temperature | ASTM-D3418 | °F | 374 |
| Melting Point | ASTM-D789 | °F | 650-750 |
| Electrical | | | |
| Dielectric Strength – Short Term | ASTM-D149 | volts/mil | 425 |
| Dielectric Constant @ 60 Hz | ASTM-D150 | | 3.07 |
| Dielectric Constant @ 10 ⁶ Hz | ASTM-D150 | | 3.03 |
| Dissipation Factor @ 60 Hz | ASTM-D150 | | 0.0008 |
| Volume Resistivity | ASTM-D257 | ohm-cm | > 10 ¹⁶ |
| Miscellaneous | | | |
| Water Absorption/24 hrs. | ASTM-D570 | % weight | 0.3 |
| Water Absorption @ saturation | ASTM-D570 | % weight | 0.6 |
| Flammability | UL 94 | | HB (0.240") |
| Color | | | Amber |
| Agency Compliance | | | |
| FDA/USDA | | | Yes |
| 3-A Dairy Standards | | | Yes |
| NSF Std. 61 | | | Yes |
| USP Class VI | | | Available |

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