



## UNITRON<sup>®</sup> Polyphenylene Sulfide

### UNITRON PPS (Polyphenylene Sulfide)

is a non-reinforced semi-crystalline polymer that offers exceptional strength and stability at elevated temperatures and is unaffected by even the harshest of chemical environments. Most acids, strong bases, fuels and even steam have virtually no affect on the physical properties of this material. While polyphenylene sulfide products have traditionally been know to be brittle, UNITRON PPS machines easily and exhibits excellent toughness. UNITRON PPS's extremely low moisture absorption rate and its low coefficient of thermal expansion contribute to this being one of the most dimensionally stable thermoplastic materials available. UNITRON PPS offers superior electrical properties, is rated UL94, V-0, and is tan in color. Nytef Plastics offers UNITRON PPS stock shapes in a wide range of heavy cross section rod, sheet, and tubular bar sizes.

### UNITRON PPS ATTRIBUTES

- 425°F Relative Thermal Index Rating
- Excellent Strength and Rigidity
- Extremely Low Moisture Absorption
- Superior Electrical Properties
- Flame Resistant - UL 94, V-0 Rated
- Easily Machined and Fabricated

### TYPICAL INDUSTRIES

- Pump, Valve & Compressor Mfg.
- Medical Equipment
- Pharmaceutical Manufacturing
- Aircraft and Aerospace
- Electrical and Electronic Products
- Semiconductor Manufacturing
- Petroleum Exploration & Refining

### APPLICATIONS

- Compressor Vanes
- Manifolds and Valves
- Electrical Insulators, Connectors and Test Sockets
- Liquid Chromatography Components
- Down Hole Drill & Pump Components
- CMP Clamp Rings
- Sensor Components

Nytef 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 30 years of experience in the custom extrusion of application-specific and proprietary resins to meet even the most demanding performance requirements. Nytef Plastics offers full technical support for all products and is certified to ISO 9002 standards for the manufacture of extruded plastics stock shapes.

## UNITRON® POLYPHENYLENE SULFIDE

Property	Test Method	Units	UNITRON PPS
			<b>Unfilled PPS</b>
<b>Mechanical</b>			
Specific Gravity	ASTM-D792	---	1.35
Tensile Strength	ASTM-D638	psi	12,500
Tensile Elongation	ASTM-D638	%	6
Tensile Modulus of Elasticity	ASTM-D638	psi	500,000
Flexural Strength	ASTM-D790	psi	21,000
Flexural Modulus of Elasticity	ASTM-D790	psi	600,000
Izod Impact (notched)	ASTM-D256	ft.-lbs./in.	0.5
Rockwell Hardness	ASTM-D785	M scale	M93
<b>Thermal</b>			
Coef. of Linear Thermal Expansion	ASTM-D696	in./in./°F	$3 \times 10^{-5}$
Relative Thermal Index	UL 746	°F	425
Heat Deflection Temp. @ 264 psi	ASTM-D648	°F	221
Melting Point	ASTM-D3418	°F	540
<b>Electrical</b>			
Dielectric Strength-Short Term	ASTM-D149	volts/mil	450
Dielectric Constant @ 10 <sup>6</sup> Hz	ASTM-D150		3.0
Dissipation Factor @ 60 Hz	ASTM-D150		0.0009
Volume Resistivity	ASTM-D257	ohm-cm	$>10^{16}$
<b>Miscellaneous</b>			
Water Absorption/24 hrs.	ASTM-D570	% weight	0.02
Flammability	UL 94		V-0

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