

# TECHNICAL DATA SHEET

## PPS

(PolyPhenylene Sulfide)

PolyPhenylene Sulfide (PPS) offers the broadest resistance to chemicals of any advanced engineering plastic. They have no known solvents below 392°F (200°C) and are inert to steam, strong bases, fuels and acids. Minimal moisture absorption and a very low coefficient of linear thermal expansion, combined with stress-relieving manufacturing, make PPS ideally suited for precise tolerance machined components. It is ideal for structural applications in corrosive environments or as a PEEK replacement at lower temperatures.

### Techtron® (unfilled)

As an unfilled material, Techtron® is easily machined to close tolerances. It is ideal for structural applications in corrosive environments or as a lower-temperature replacement for PEEK. Standard Techtron® PPS is off-white in color.

### Techtron® PSGF (40% glass filled)

This product is the most recognized filled grade of PPS. It offers better dimensional stability and thermal performance than unfilled Techtron® PPS and maintains its strength to above 425°F (220°C).

\*Unfilled Techtron® PPS is FDA and USDA compliant.

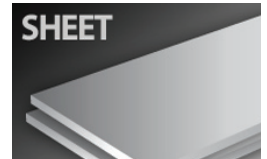
#### Benefits

- Excels in corrosive environments to 425°F (220°C)
- Excellent chemical resistance
- Essentially zero moisture absorption
- Machines to tight tolerances, dimensionally stable
- Excellent alternative to PEEK at lower temperatures

#### Applications

- Aerospace components
- Medical and diagnostic device parts
- High pressure liquid chromatography components
- Wafer retaining rings for CMP polishing
- Pump & valve components
- "Down-hole" applications
- HVAC equipment
- Lantern rings
- Chip nests
- Retainer rings
- Oil field parts

#### SHAPES AVAILABLE



**SEE NEXT PAGE FOR ADDITIONAL INFORMATION**



<b>TYPICAL PROPERTIES of Techtron® PPS</b>			
<b>ASTM or UL test</b>	<b>Property</b>	<b>Techtron® PPS unfilled (extruded)</b>	<b>Techtron® PSGF 40% glass filled (compression molded)</b>
<b>PHYSICAL</b>			
D792	Density (lb/in <sup>3</sup> ) (g/cm <sup>3</sup> )	0.049 1.35	0.061 1.70
D570	Water Absorption, 24 hrs (%)	0.01	0.02
D570	Water Absorption, saturation (%)	0.03	0.03
<b>MECHANICAL</b>			
D638	Tensile Strength (psi)	13,500	5,000
D638	Tensile Modulus (psi)	500,000	730,000
D638	Tensile Elongation at Break (%)	15	1
D790	Flexural Strength (psi)	21,000	23,000
D790	Flexural Modulus (psi)	575,000	1,000,000
D695	Compressive Strength (psi)	21,500	24,000
D695	Compressive Modulus (psi)	430,000	1,300,000
D785	Hardness, Rockwell	M95 / R125	M94 / R125
D256	IZOD Notched Impact (ft-lb/in)	0.6	1.0
<b>THERMAL</b>			
D696	Coefficient of Linear Thermal Expansion (x 10 <sup>-5</sup> in./in./°F)	2.8	2.5
D648	Heat Deflection Temp (°F / °C) at 264 psi	250 / 121	490 / 254
D3418	Melting Point Temp (°F / °C)	540 / 282	540 / 282
-	Max Operating Temp (°F / °C)	425 / 218	450 / 232
C177	Thermal Conductivity (BTU-in/ft <sup>2</sup> -hr-°F) (x 10 <sup>-4</sup> cal/cm-sec-°C)	2.00 6.89	2.10 7.23
UL94	Flammability Rating	V-0	V-0
<b>ELECTRICAL</b>			
D149	Dielectric Strength (V/mil) short time, 1/8" thick	540	385
D150	Dielectric Constant at 1 MHz	3.0	-
D150	Dissipation Factor at 1 MHz	0.0013	-
D257	Volume Resistivity (ohm-cm)at 50% RH	> 10 <sup>13</sup>	> 10 <sup>13</sup>

Techtron is a registered trademark of Quadrant Engineering Plastic Products.

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.