



MANUFACTURING CORPORATION

- Plastics Machining
- Spring Energized Seals
- Rotary Lip Seals

### Material Data Sheet

Material: Techtron® HPV

Polyphenylene Sulfide

Techtron® HPV exhibits excellent wear resistance and a low coefficient of friction. It overcomes the disadvantages of virgin PPS caused by a high coefficient of friction, and of glass fibre reinforced PPS which can cause premature wear of the counterface in moving-part applications. PPS (polyphenylene sulfide) products offer the broadest resistance to chemicals of any advanced engineering plastic. They have no known solvents below 392°F (200°C) and offer inertness to steam, strong bases, fuels and acids. Minimal moisture absorption and a very low coefficient of linear thermal expansion, combined with Quadrant's proprietary stress relieving processes, make these PPS products ideally suited for precise tolerance machined components. In addition, PPS products exhibit excellent electrical characteristics and are inherently flame retardant.

Mechanical Properties	Test Method ASTM	Value	Units
Specific Gravity, 73°F	D792	1.43	
Tensile Strength, 73°F	D638	10,900	psi
Tensile Modulus of Elasticity, °F	D638	540,000	psi
Tensile Elongation ( at break), 73°F	D638	5	%
Flexural Strength, 73°F	D790	10,500	psi
Flexural Modulus of Elasticity, 73°F	D790	535,000	psi
Shear Strength, 73°F	D732		psi
Compressive Strength, 10% Deformation, 73°F	D695	15,500	psi
Compressive Modulus of Elasticity, 73°F	D695	342,000	psi
Hardness, Rockwell, Scale as noted, 73°F	D785	M84	
Hardness, Durometer, Shore "D" Scale, 73°F	D2240		
Izod Impact (notched), 73°F	D256 Type A	1.4	ft-lb/in of notch
Coefficient of Friction (Dry vs. Steel) Dynamic	QTM 55007	0.2	
Limiting PV (with 4:1 safety factor applied)	QTM 55007	8,750	ft.lbs./in. <sup>2</sup> min
Wear Factor "k" x 10 <sup>-10</sup>	QTM 55010	62	in. <sup>3</sup> -min/ft.lbs.hr
<b>Thermal Properties</b>			
Coefficient of Linear Thermal Expansion (-40°F to 300°F)	E-831 (TMA)	3.3 x 10 <sup>-5</sup>	in/in./°F
Heat Deflection Temperature 264 psi	D648	240	°F
TG-Glass transition (amorphous)	D3418	N/A	°F
Meltin Point (Crystalline) peak	D3418	536	°F
Continuous Service Temperature in Air (Max.) (1)		430	°F
Thermal Conductivity	F433	2.1	BTU-in/hr-ft <sup>2</sup> -°F
<b>Electrical Properties</b>			
Dielectric Strength, Short Term	D149	500	Volts/mil
Surface Resistivity	EOS/ESD S11.11	>10 <sup>13</sup>	ohm/square
Dielectric Constant, 106 Hz	D150		
Dissipation Factor, 106 Hz	D150		
Flammability @ 3.1 mm (1/8 in.)	UL 94	V-0	
FDA Compliant		Yes	

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\*The values shown in these and the following charts are typical, average properties. Actual values may differ due to variations in resin formulations and processing methods. These values are obtained from sources believed to be reliable, including the resin manufactures, converters and other published sources. However, they should not be used for specification or design purposes. Above information provided by Quadrant EPP.