Tecatron® PPS (Polyphenylene Sulfide)

Tecatron® PPS is a high performance thermoplastic that combines good mechanical properties with excellent thermal and chemical resistance properties. There is no known solvent that dissolves Tecatron PPS at temperatures below 392°F. Its low ionic impurities make it an excellent choice for applications where high purity is a concern. Tecatron® GF40 is a glass reinforced PPS material that offers extremely high strength in addition to chemical resistance. Tecatron® PVX is a bearing grade PPS that is suitable for high load applications.

- High purity characteristics - Low ionic impurities are apparent.
- Outstanding retention of mechanical properties under continuous use up to 338°F (170°C)

- Excellent chemical resistance
- Good electrical insulator
- High strength-to-weight ratio
- Corrosion resistant
- High mechanical strength
- Creep resistance - Long-term property retention

- Dimensional stability over wide variations of temperature and moisture

Tecatron® PPS has excellent thermal and chemical resistance along with its ionic impurities make an excellent choice for applications requiring low outgassing and high purity. Tecatron® PPS is typically used in the automotive, electrical/electronic, industrial, mechanical, appliance and semiconductor industries

Property	ASTM Test Method	Units	Tecatron® PPS	Tecatron® GF 40	Tecatron® PVX
Physical					
Density	D792	lbs/in^3	0.0488	0.0592	0.0531
Specific Gravity	D792	g/cc	1.35	1.64	1.47
Water Absorption, @24 hours	D570	%	0.02	0.02	0.02
Mechanical					
Tensile Strength @ Yield	D638	psi	15,000	14,500	7,700
Tensile Modulus	D639	psi	731,500	2,030,000	667,000
Elongation @ Break	D638	%	10	1.9	1.5
Flexural Strength	D790	psi	24,000	21,000	-
Flexural Modulus	D790	psi	622,000	1,022,000	-
Compressive Strength @ 10% strain	D695	psi	17,800	22,000	-
Compressive Strength Modulus	D695	psi	367,000	519,000	-
Izod Impact Strength	D256	ft-lbs/in	0.52	0.66	-
Rockwell Hardness	D785	M Scale	102	104	-

Property	ASTM Test Method	Units	Tecatron® PPS	Tecatron® GF 40	Tecatron® PVX
Thermal					
Heat Deflection Temp					
@ 66 psi	D648	°F	400	-	-
@ 264 psi	D648	°F	220	500	-
Coefficient of Linear Thermal Expansion	D696	in/in/°F	3.3×10^{-5}	2.2×10^{-5}	2.8×10^{-5}
Max Servicing Temp					
Intermittent	-	°F	500	500	500
Long Term	UL746B	°F	338	446	446
Specific Heat	-	BTU/lb-°F	0.239	0.282	-
Thermal Conductivity	-	BTU-in/hr-ft^2-°F	2.08	1.74	-
Vicat Softening Point	-	°F	-	-	-
Melting Point	D2133	°F	540	540	540
Flammability	UL94	(mm)	V-0	V-0	V-0
Electrical					
Surface Resistivity	D257	ohm/square	-	10^{15}	10^{6}
Volume Resistivity	D257	ohm-cm	1.0×10^{15}	10^{13}	10^{6}
Dielectric Strength	D149	V/mil	450	508	-
Dielectric Constant					
@ 1KHz, 50% RH	D150	-	3.0	-	3.0
@ 1MHz	D150	-	-	4	-
Dissipation Factor					
@ 1KHz	D150	-	0.0001	0.001	0.001
@ 1MHz	D150	-	-	0.004	-

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. All values at 73°F (23°C) unless otherwise noted.