TECATRON® PPS natural - Stock Shapes (rods, plates, tubes)

Chemical Designation
PPS (Polyphenylensulfide)

Colour
natural

Density
1.36 g/cm^3

Main features
- high purity
- very good chemical resistance
- good heat deflection temperature
- high creep resistance
- high strength
- high dimensional stability
- resistance against high energy radiation

Target Industries
- chemical technology
- mechanical engineering
- precision engineering
- electrical engineering
- food processing
- food engineering
- vacuum technology

Mechanical properties	condition	value	unit	test method	comment
Modulus of elasticity (tensile test)	@ 73 °F	836,700	psi	ASTM D 638	
Tensile strength at yield	@ 73 °F	13,700	psi	ASTM D 638	
Elongation at break (tensile test)	@ 73 °F	2.5	%	ASTM D 638	
Flexural strength	@ 73 °F	20,400	psi	ASTM D 790	
Modulus of elasticity (flexural test)	@ 73 °F	631,100	psi	ASTM D 790	
Compression strength	@ 10% strain	19,000	psi	ASTM D 695	
Compression modulus		400,000	psi	ASTM D 695	
Impact strength (Izod)	@ 73 °F	0.62	ft-lbs/in	ASTM D 256	
Rockwell hardness	@ 73 °F M Scale	105		ASTM D 785	
Rockwell hardness	R Scale	124		ASTM D 785	
Coefficient of friction	Dynamic, 40 psi, 50 fpm	0.24		ASTM D 3702	
Wear (K) factor	Against Steel, 40 psi, 50 fpm	540*10^{-10}	in³-min/ft-lbs-hr	ASTM D 3702	

Thermal properties	condition	value	unit	test method		comment
Melting temperature		536	°F	-		(1) per UL746B (2) data from public sources (3) data from public sources (4) data from public sources
Deflection temperature	@264 psi	220	°F	ASTM D 648		
Deflection temperature	@ 66 psi	400	°F	ASTM D 648		
Service temperature	Long Term	338	°F	-	1)	
Service temperature	Intermittent	500	°F	-		
Thermal expansion (CLTE)	72 F - 140 F	3.3	*10^{-5} in/in/°F	ASTM D 696	2)	
Specific heat		0.239	BTU/lb-F°	ISO 22007-4:2008	3)	
Thermal conductivity		2.08	BTU-in/hr-ft^2-°F	ISO 22007-4:2008	4)	

Electrical properties	condition	value	unit	test method		comment
surface resistivity		1.0*10^{15}	Ω/square	DIN IEC 60093	1)	(1) data from public sources (2) data from public sources (3) data from public sources (4) data from public sources
Dielectric strength		450	V/mil	ASTM D 149	2)	
Dissipation factor	@ 1 KHz, 73 °F	.0001		ASTM D 150	3)	
Dielectric constant	@ 1 KHz, 73 °F, 50% RH	3.0		ASTM D 150	4)	

Other properties	condition	value	unit	test method		comment
Moisture absorption	@ 24 hrs, 73 °F	0.01	%	ASTM D 570		(1) Estimated
Flammability (UL94)		V0		DIN IEC 60695-11-10;	1)	

- Resin specification:
  ASTM D 6358-06 PPS000B00000
  Shapes specification:
  NONE

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