

DATASHEET

TECHTRON HPV PPS

Techtron HPV PPS is a reinforced, internally lubricated semi-crystalline polymer developed to close the gap both in performance and price between the standard thermoplastic materials and the high-end advanced engineering plastics. Techtron HPV PPS demonstrates an excellent combination of properties including wear resistance, load-bearing capabilities and dimensional stability when exposed to chemicals and high temperature environments. Techtron HPV PPS is found in applications where PA, POM, PET and other plastics fall short or where PI, PEEK and PAI are over-engineered and a more economical solution must be found.

Applications

- High Pressure Liquid Chromatography
- Testing Fixtures
- Lantern Rings
- Pump Housing

Availability

- Colour – Blue
- Type – Sheets & Rods
- Regularly produced in a wide variety of thicknesses

Typical Properties

General Properties	Method	Unit	Test Result
Physical Properties			
Colour	-	-	Blue
Density	ISO 1183-1	g/cm ²	1.42
Water Absorption:			
- After 24h immersion in water of 23°C	ISO 62	mg	0.01
- At saturation in water of 23°C	-	%	0.20
Thermal Properties			
Melting Temperature (DSC, 10°C/min)	ISO 11357 – 1/-3	°C	280
Glass Transition Temperature (DSC, 10°C/min)	ISO 11357 – 1/-2	°C	-
Thermal Conductivity at 23°C	-	W/(K.m)	0.30
Coefficient of Linear Thermal Expansion:			
- Average value between 23 and 100°C	-	W/(K.m)	50x10 ⁻⁶
- Average value between 23 and 150°C	-	W/(K.m)	60x10 ⁻⁶
- Average value above 150°C	-	W/(K.m)	100x10 ⁻⁶
Temperature of Deflection Under Load:			
- Method A: 1.8 MPa	ISO 75-1/-2	°C	115
Max Allowable Service Temperature in Air:			

- Continuously: for 5,000 to 20,000h	-	°C	220
Minimum Service Temperature	-	°C	-20
Flammability:			
- According to UL94 (3/6mm thickness)	-	-	V-0
Mechanical Properties			
Tension Test:			
- Tensile Strength	ISO 527-1/-2	MPa	78
- Tensile Strain at Yield	ISO 527-1/-2	%	-
- Tensile Strain at Break	ISO 527-1/-2	%	3.5
- Tensile Modulus of Elasticity	ISO 527-1/-2	MPa	4000
Flexural Test:			
- Flexural Strength	ISO 178	MPa	118
- Flexural Modulus of Elasticity	ISO 178	MPa	-
Compression Test:			
- Compressive Stress @ 1/2/5% Nominal Strain	ISO 604	MPa	33/65/105
Charpy Impact Strength - Unnotched	ISO 179-1-1eU	kJ/m ²	25
Charpy Impact Strength - Notched	ISO 179-1-1eU	kJ/m ²	4
Rockwell Hardness	ISO 2039-2	-	82
Dynamic Coefficient of Friction	ISO 7148-2(15)	-	0.2-0.35
Wear Rate	ISO 7148-2(15)	Um/km	5
Electrical Properties			
Electric Strength	EC 60243-1	kV/mm	24
Volume Resistivity	IEC 60093	Ohm.cm	>10E 14
Surface Resistivity	IEC 60093	Ohm	>10E13
Relative Permittivity – at 1MHz	IEC 60250	-	3.3
Dielectric Dissipation Factor – at 1 MHz	IEC 60250	-	0.003