



PROFESSIONAL PLASTICS, INC.

Leading Global Supplier of Engineered Plastic Shapes

Techtron® HPV Material Data Sheet

Polyphenylene Sulfide (PPS), Bearing grade, Extruded

TECHTRON® HPV is a reinforced, internally lubricated semi-crystalline polymer developed to close the gap both in performance and price between the standard thermoplastic materials (e.g., PA, POM, PETP,) and the high end Advanced Engineering Plastic Products (e.g., PBI, PI PAI, PEEK).

Physical Properties	Metric	English	Comments
Specific Gravity	1.43 g/cc	0.0517 lb/in ³	ASTM D792
Water Absorption	0.01 %	0.01 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.09 %	0.09 %	Immersion; ASTM D570(2)
Mechanical Properties			
Hardness, Rockwell M	84	84	ASTM D785
Tensile Strength, Ultimate	75.2 MPa	10900 psi	ASTM D638
Elongation at Break	5 %	5 %	ASTM D638
Tensile Modulus	3.72 GPa	540 ksi	ASTM D638
Flexural Modulus	3.69 GPa	535 ksi	ASTM D790
Flexural Yield Strength	72.4 MPa	10500 psi	ASTM D790
Compressive Strength	107 MPa	15500 psi	10% Def.; ASTM D695
Compressive Modulus	2.36 GPa	342 ksi	ASTM D695
Coefficient of Friction	0.2	0.2	Dry vs. Steel; QTM55007
K (wear) Factor	125 x 10 ⁻⁸ mm ³ /N-M	62 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.307 MPa-m/sec	8750 psi-ft/min	4:1 safety factor; QTM 55007
Izod Impact, Notched	0.747 J/cm	1.4 ft-lb/in	ASTM D256 Type A
Electrical Properties			
Surface Resistivity per Square	Min 1e+013 ohm	Min 1e+013 ohm	EOS/ESD S11.11
Dielectric Strength	19.7 kV/mm	500 V/mil	Short Term; ASTM D149
Thermal Properties			
CTE, linear 68°F	59.4 μm/m-°C	33 μin/in-°F	(-40°F to 300°F); ASTM E831
Thermal Conductivity	0.303 W/m-K	2.1 BTU-in/hr-ft ² -°F	ASTM F433
Melting Point	280 °C	536 °F	Crystalline, Peak; ASTM D3418

Maximum Service Temperature, Air	221 °C	430 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	116 °C	240 °F	ASTM D648
Flammability, UL94 (Estimated Rating)	V-0	V-0	1/8 inch
Qualitative Processing Properties			
Compliance - FDA	Compliant		
Machinability	3	1-10, 1=Easier to Machine	
Service in Alcohols	Acceptable		
Service in Aliphatic Hydrocarbons	Acceptable		
Service in Aromatic Hydrocarbons	Acceptable		
Service in Chlorinated Solvents	Acceptable		
Service in Ethers	Acceptable		
Service in Ketones	Acceptable		
Service in Strong Acids	Limited		
Service in Strong Alkalies	Acceptable		
Service in Sunlight	Limited		
Service in Weak Acids	Acceptable		
Service in Weak Alkalies	Acceptable		

All statements, technical information and recommendations contained in this database are presented in good faith, based upon tests believed to be reliable and practical field experience. The reader is cautioned, however, that Professional Plastics, Inc. cannot guarantee the accuracy or completeness of this information, and it is the customer's responsibility to determine the suitability of products in any given application.

Order Techtron® HPV Online at:

<http://www.professionalplastics.com/TECHTRONHPV>

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