

Quadrant EPP Techtron® HPV PPS + solid lubricant, bearing grade, extruded (ISO Data)

Category : Polymer , Thermoplastic , Polyphenylene Sulfide (PPS) , Polyphenylene Sulfide (PPS), Unreinforced, Extruded

Material Notes:

As a reinforced, internally lubricated PPS grade, 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. Very high maximum allowable service temperature in air (220°C continuously, up to 260°C for short periods of time) High mechanical strength, stiffness and creep resistance, also at elevated temperatures Excellent chemical and hydrolysis resistance Excellent wear & frictional behaviour Very good dimensional stability Physiologically inert (suitable for food contact) Excellent resistance to high energy radiation (gamma- and X-rays) Good UV-resistance Inherent low flammability Good electrical insulating and dielectric properties

Order this product through the following link:

http://www.lookpolymers.com/polymer_Quadrant-EPP-Techtron-HPV-PPS-solid-lubricant-bearing-grade-extruded-ISO-Data.php

Physical Properties	Metric	English	Comments
Density	1.42 g/cc	0.0513 lb/in ³	ISO 1183-1
Moisture Absorption at Equilibrium	0.050 %	0.050 %	50% RH
Water Absorption at Saturation	0.20 %	0.20 %	
Outgassing - Total Mass Loss	0.060 %	0.060 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	82	82	ISO 2039-2
Hardness, Shore D	82	82	
Ball Indentation Hardness	160 MPa	23200 psi	ISO 2039-1
Tensile Strength	78.0 MPa	11300 psi	at Break (NYP); ISO 527-1/-2
Elongation at Break	3.5 %	3.5 %	ISO 527-1/-2
Tensile Modulus	4.00 GPa	580 ksi	ISO 527-1/-2
Flexural Strength	118 MPa	17100 psi	
Compressive Strength	33.0 MPa	4790 psi	ISO 604
	@Strain 1 %	@Strain 1 %	
	65.0 MPa	9430 psi	ISO 604
	@Strain 2 %	@Strain 2 %	

Mechanical Properties	Metric 105 MPa	English 15200 psi	Comments ISO 604
	@Strain 5 %	@Strain 5 %	
K Factor (ISO)	5.0 $\mu\text{m}/\text{km}$	5.0 $\mu\text{m}/\text{km}$	
Charpy Impact Unnotched	2.50 J/cm ²	11.9 ft-lb/in ²	ISO 179-1/1eU
Charpy Impact, Notched	0.400 J/cm ²	1.90 ft-lb/in ²	ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.20 - 0.35	0.20 - 0.35	
Limiting Pressure Velocity	0.270 MPa-m/sec	7710 psi-ft/min	at 1 m/s unlubricated
	0.430 MPa-m/sec	12300 psi-ft/min	at 0.1 m/s unlubricated

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 23.0 - 100 $^{\circ}\text{C}$	27.8 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 73.4 - 212 $^{\circ}\text{F}$	
Thermal Conductivity	0.300 W/m-K	2.08 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
Melting Point	280 $^{\circ}\text{C}$	536 $^{\circ}\text{F}$	DSC, 10 $^{\circ}\text{C}/\text{min}.$; ISO 11357-1/-3
Maximum Service Temperature, Air	220 $^{\circ}\text{C}$	428 $^{\circ}\text{F}$	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	115 $^{\circ}\text{C}$	239 $^{\circ}\text{F}$	ISO 75-1/-2
Flammability, UL94	V-0	V-0	
Oxygen Index	44 %	44 %	ISO 4589-1/-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.0\text{e}+14$ ohm-cm	$\geq 1.0\text{e}+14$ ohm-cm	IEC 60093
Surface Resistivity per Square	$\geq 1.0\text{e}+13$ ohm	$\geq 1.0\text{e}+13$ ohm	IEC 60093
Dielectric Constant	3.3 @Frequency ≥ 100000 Hz	3.3 @Frequency ≥ 100000 Hz	IEC 60250
Dielectric Strength	24.0 kV/mm	610 kV/in	
Dissipation Factor	0.0030 @Frequency 100000 Hz	0.0030 @Frequency 100000 Hz	IEC 60250
Comparative Tracking Index	100 V	100 V	IEC 60112

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
European Food 1935/2004	Yes	Yes	
FDA	Yes	Yes	
USP Class VI	No	No	

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Limited	Limited	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Acceptable	Acceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Acceptable	Acceptable	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	

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