

Mitsubishi Chemical Advanced Materials Techtron® PSBG PPS, Polyphenylene sulfide, bearing grade, compression molded (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Polyphenylene Sulfide (PPS); Polyphenylene Sulfide (PPS); Molded

Material Notes: Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	1.52 g/cc	1.52 g/cc	ASTM D792
Water Absorption	0.020 %	0.020 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.030 %	0.030 %	Immersion; ASTM D570(2)
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	93	93	ASTM D785
Hardness, Rockwell R	126	126	ASTM D785
Hardness, Shore D	86	86	ASTM D2240
Tensile Strength	34.5 MPa	5000 psi	ASTM D638
Tensile Strength at 150°C (300°F)	3.45 MPa	500 psi	ASTM D638
Tensile Strength at 65°C (150°F)	20.7 MPa	3000 psi	ASTM D638
Elongation at Break	1.0 %	1.0 %	ASTM D638
Tensile Modulus	6.34 GPa	920 ksi	ASTM D638
Flexural Strength	68.9 MPa	10000 psi	ASTM D790
Flexural Modulus	5.65 GPa	820 ksi	ASTM D790
Compressive Strength	103 MPa	15000 psi	10% Def.; ASTM D695
Compressive Modulus	5.52 GPa	800 ksi	ASTM D695
Izod Impact, Notched	0.534 J/cm	1.00 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.20	0.20	Dry vs. Steel; QTM55007
K (wear) Factor	1610 x 10 ⁻⁸ mm ³ /N-M	800 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.876 MPa-m/sec	25000 psi-ft/min	4:1 safety factor; QTM 55007
Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	<= 1e+05	<= 1e+05	EOS/ESD S11.11
Thermal Properties	Metric	English	Comments
CTE, linear	30.6 µm/m-°C @Temperature -40.0 - 149 °C	17.0 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Thermal Conductivity	0.255 W/m-K	1.77 BTU-in/hr-ft ² -°F	ASTM F433
Melting Point	282 °C	540 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	232 °C	450 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	254 °C	490 °F	ASTM D648
Flammability, UL94	V-0 @Thickness 3.17 mm	V-0 @Thickness 0.125 in	Estimated Rating
Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
Canada AG	No	No	
FDA	No	No	
NSF	No	No	
USDA	No	No	
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	
Conductive / Static Dissipative	Yes	Yes	
Continuous Sunlight	Acceptable	Acceptable	
Hot Water / Steam	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	

Inorganic Salt Solutions	Acceptable	Acceptable
Ketones, Esters	Acceptable	Acceptable
Descriptive Properties		
Machinability	5	1-10, 1=Easier to Machine



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