

Mitsubishi Chemical Advanced Materials Semitron® ESd 500 HR PTFE, static dissipative, compression molded (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Fluoropolymer; Polytetrafluoroethylene (PTFE)

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

Key Words: PTFE

Physical Properties	Metric	English	Comments
Specific Gravity	2.30 g/cc	2.30 g/cc	ASTM D792
Water Absorption	0.030 %	0.030 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	2.0 %	2.0 %	Immersion; ASTM D570(2)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	50	50	ASTM D785
Hardness, Shore D	65	65	ASTM D2240
Tensile Strength	10.3 MPa	1500 psi	ASTM D638
Elongation at Break	50 %	50 %	ASTM D638
Tensile Modulus	1.72 GPa	250 ksi	ASTM D638
Flexural Strength	15.2 MPa	2200 psi	ASTM D790
Flexural Modulus	2.41 GPa	350 ksi	ASTM D790
Compressive Strength	26.2 MPa	3800 psi	10% Def.; ASTM D695
Compressive Modulus	1.55 GPa	225 ksi	ASTM D695
Shear Strength	11.7 MPa	1700 psi	ASTM D732
Izod Impact, Notched	0.534 J/cm	1.00 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.10	0.10	Dry vs. Steel; QTM55007
K (wear) Factor	60.4 x 10 ⁻⁸ mm ³ /N-M	30.0 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.210 MPa-m/sec	6000 psi-ft/min	4:1 safety factor; QTM 55007

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	1.00e+10 - 1.00e+12 ohm	1.00e+10 - 1.00e+12 ohm	EOS/ESD S11.11
Dielectric Constant	3.08 @Frequency 1e+6 Hz	3.08 @Frequency 1e+6 Hz	ASTM D150
Dissipation Factor	0.075 @Frequency 1e+6 Hz	0.075 @Frequency 1e+6 Hz	ASTM D150

Thermal Properties	Metric	English	Comments
CTE, linear	103 µm/m-°C @Temperature -40.0 - 149 °C	57.0 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Melting Point	327 °C	621 °F	ASTM D3418
Maximum Service Temperature, Air	260 °C	500 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	98.9 °C	210 °F	ASTM D648
Flammability, UL94	V-0 @Thickness 3.17 mm	V-0 @Thickness 0.125 in	Estimated Rating

Chemical Resistance Properties	Metric	English	Comments
Conductive / Static Dissipative	Yes	Yes	


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