

## Semitron® ESd 420 Polyetherimide, Static Dissipative, Material Data Sheet

<b>Physical Properties</b>	<b>Metric</b>	<b>English</b>	<b>Comments</b>
Specific Gravity	1.34 g/cc	1.34 g/cc	ASTM D792
Water Absorption	0.500 %	0.500 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	2.90 %	2.90 %	Immersion; ASTM D570(2)
<b>Mechanical Properties</b>	<b>Metric</b>	<b>English</b>	<b>Comments</b>
Hardness, Rockwell M	118	118	ASTM D785
Tensile Strength, Ultimate	79.3 MPa	11500 psi	ASTM D638
Elongation at Break	2.00 %	2.00 %	ASTM D638
Tensile Modulus	4.41 GPa	640 ksi	ASTM D638
Flexural Modulus	4.48 GPa	650 ksi	ASTM D790
Flexural Yield Strength	100 MPa	14500 psi	ASTM D790
Compressive Strength	164 MPa	23800 psi	10% Def.; ASTM D695
Compressive Modulus	2.55 GPa	370 ksi	ASTM D695
Shear Strength	55.3 MPa	8020 psi	ASTM D732
Coefficient of Friction	0.280	0.280	Dry vs. Steel; QTM55007
K (wear) Factor	201 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	100 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.333 MPa-m/sec	9500 psi-ft/min	4:1 safety factor; QTM 55007
Izod Impact, Notched	0.534 J/cm	1.00 ft-lb/in	ASTM D256 Type A
<b>Electrical Properties</b>	<b>Metric</b>	<b>English</b>	<b>Comments</b>
Surface Resistivity per Square	1.00e+6 - 1.00e+9 ohm	1.00e+6 - 1.00e+9 ohm	EOS/ESD S11.11
Dielectric Constant	5.63	5.63	ASTM D150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dissipation Factor	0.266	0.266	ASTM D150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
<b>Thermal Properties</b>	<b>Metric</b>	<b>English</b>	<b>Comments</b>
CTE, linear	35.1 µm/m-°C	19.5 µin/in-°F	ASTM E831
	@Temperature -40.0 - 149 °C	@Temperature -40.0 - 300 °F	
Thermal Conductivity	0.218 W/m-K	1.51 BTU-in/hr-ft <sup>2</sup> -°F	ASTM F433
Maximum Service Temperature, Air Deflection	171 °C	340 °F	Long Term
Temperature at 1.8 MPa (264 psi)	210 °C	410 °F	ASTM D648
Glass Transition Temp, Tg	210 °C	410 °F	ASTM D3418
Flammability, UL94	V-0	V-0	1/8 inch (Estimated Rating)