



Semitron ESD 420

Polyetherimide, static dissipative, compression molded

Physical Properties	Metric	English	Comments
Specific Gravity	1.34 g/cc	0.0484 lb/in ³	ASTM D792
Water Absorption	0.5 %	0.5 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	2.9 %	2.9 %	Immersion; ASTM D570(2)

Mechanical Properties

Hardness, Rockwell M	118	118	ASTM D785
Tensile Strength, Ultimate	79.3 MPa	11500 psi	ASTM D638
Elongation at Break	2 %	2 %	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	0.28	0.28	Dry vs. Steel; QTM55007
K (wear) Factor	201 x 10 ⁻⁸ mm ³ /N-M	100 x 10 ⁻¹⁰ in ³ -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 ft-lb/in	ASTM D256 Type A

Electrical Properties

Surface Resistivity per Square	1e+006 - 1e+009 ohm	1e+006 - 1e+009 ohm	EOS/ESD S11.11
Dielectric Constant	5.63	5.63	1MHz; ASTM D150
Dissipation Factor	0.266	0.266	1MHz; ASTM D150

Thermal Properties

CTE, linear 68°F	35.1 μm/m-°C	19.5 μin/in-°F	(-40°F to 300°F); ASTM E831
Thermal Conductivity	0.218 W/m-K	1.51 BTU-in/hr-ft ² -°F	ASTM F433
Maximum Service Temperature, Air	171 °C	340 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	210 °C	410 °F	ASTM D648
Glass Temperature	210 °C	410 °F	ASTM D3418
Flammability, UL94 (Estimated Rating)	V-0	V-0	1/8 inch

Qualitative Processing Properties

Compliance - FDA	Not Compliant	
Machinability	4	1-10, 1=Easier to Machine
Service in Alcohols	Acceptable	
Service in Aliphatic Hydrocarbons	Limited	
Service in Aromatic Hydrocarbons	Unacceptable	
Service in Chlorinated Solvents	Unacceptable	
Service in Ethers	Acceptable	
Service in Ketones	Unacceptable	
Service in Strong Acids	Unacceptable	
Service in Strong Alkalies	Unacceptable	
Service in Sunlight	Acceptable	
Service in Weak Acids	Acceptable	
Service in Weak Alkalies	Acceptable	

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