



Semitron® ESd 420

Polyetherimide, static dissipative, compression molded

Semitron® ESd 410C is the only, truly dissipative plastic product for use in high temperature applications

- Surface resistivity: $10^6 - 10^9$ /sq
- Thermal performance

Compression	Rod	Disc	Plate	Tubular Bar	Other
Semitron® ESd 410C PEI	-	.3.5"-11.0"	.375"- 2.0" (C,E)	-	-

Key: C = 12" wide x 12" long

E = 12" wide x 24" long

MECHANICAL PROPERTIES	Test Method	Preliminary Avg. Values
Mechanical		
Specific Gravity @ 73°F	ASTM D 792	1.45
Ultimate Tensile Strength, psi	ASTM D 638	9,500
Tensile Modulus, psi	ASTM D 638	550,000
Elongation, at break, %	ASTM D 638	2%
Flexural Strength, psi	ASTM D 790	14,500
Flexural Modulus of Elasticity, psi	ASTM D 790	525,000
Compressive Strength, psi @ 10% deformation	ASTM D 790	16,500
Compressive Modulus, psi	ASTM D 790	350,000
Hardness, Rockwell	ASTM D 785	M87
Notched Izod Impact (1/8"), ft-lb/in. of notch	ASTM D 256	1.0
Electrical		
Surface Resistivity, ohms/sq.	EOS/DSD S11.11	10^6-10^9
Static Decay, Mil-B-81705C (12% RH), seconds, max.	FTMS-4046.1	0.01
Volume Resistivity, ohm-cm	ASTM D257	10^6-10^9
Thermal		
Deflection Temp., °F at 264 psi	ASTM D 648	420
Coefficient of Linear Thermal Expansion (in./in./°F), -40 to +300 °F	ASTM E 831	3.2×10^{-5}
Continuous Use Temperature, °F	-	-
Thermal Conductivity, BTU-in/hr ² °F (W/m-°K)		
@ 25°C		1.51 (0.222)
@ 150°C	ASTM F 433	1.75 (0.258)
Flammability		
UL-94 @ 1.5 mm (1/16 in.) estimated rating based on available data	UL-94	V-O
Other		
Water Absorption, %, 24 hrs. @ 73°F	ASTM D 570	-
Ionic Impurities (ppm) by Total Digestion	-	-
Na (Sodium)		
K (Potassium)		
FE (Iron)	ICP/MS	
Outgassing, %		-
ML (Total Mass Loss)		1.80
CVCM (Collected Volatile Condensable Material)		0.00
WVR (Water Vapor Regained)	ASTM E 595	0.70
Tribological		
Coefficient of Friction – Static (50 lb. Load, 90° rotation)	Polymer 55007	0.16
Coefficient of Friction – Dynamic (unlub. @ 20 ft./min. x 250 psi)	Polymer 55007	0.20
Limiting PV (Test Value unlub. @ ft./min. ÷ 2; lb.ft.in.2 min.)	Polymer 55007	20,000
K-Factor, 1/2" ID Journal at 5,000 PV	Polymer 55100	50