



SEMITRON®

Characteristics

**STATIC DISSIPATIVE PRODUCTS WITH
THERMAL CAPABILITIES TO 500° F (260° C)**

Description

The **Semitron Esd** family of static dissipative products was designed for use where electrical discharge in operation is a problem. They are commonly used for sensitive electronic components including: integrated circuits, hard disk drives, and circuit boards. Semitron products are also an excellent choice for material handling applications, and components in high speed electronic printing and reproducing equipment.

Semitron Esd products are inherently dissipative and electrically stable unlike many other dissipative plastic shapes. They do not rely on atmospheric phenomena to activate, nor are surface treatments used to achieve dissipation. Static electricity is dissipated through these products as readily as it is dissipated along the surface.

Forms Available

- ROD .375 to 3.00 " diameter, Lengths to 48"
- BUSHING Custom produced as requested
- PLATE .375" to 2.000" thick, Widths to 12", Lengths to 24"
- COLOR Black

Typical Property Values

		Esd 225	Esd 410C	Esd 420	Esd 480	Esd 520HR
MECHANICAL @ 73F						
Specific Gravity		1.33	1.41	1.34	1.47	1.58
Tensile Strength	psi	5,400	9,000	11,500	14,500	12,000
Tensile Modulus of Elasticity	psi	200,000	850,000	640,000	940,000	800,000
Tensile Elongation (at Break)	%	15	2	2	1.5	3
Flexural Strength	psi	7,300	12,000	14,500	21,000	20,000
Flexural Modulus of Elasticity	psi	220,000	850,000	650,000	1,000,000	850,000
Shear Strength	psi	6,000	9,000	8,020		12,600
Compressive Strength, 10% Deformation	psi	8,000	19,500	23,800	26,500	30,000
Compressive Modulus of Elasticity	psi	175,000	600,000	370,000	570,000	600,000
Rockwell Hardness	M Scale	50	115	118	107	108
Izod Impact Strength, Notched	ft.-lbs/in. of notch	1.50	0.80	1.00	1.00	0.80
Coefficient of Friction, Dynamic (Dry vs. Steel)		0.29	0.18	0.28	0.20	0.24
Limiting PV (4 :1 Safety Factor Applied)	ft.lbs/in. ² min	2,000	12,000	9,500	17,000	27,000
Wear Factor	in ³ -min/ft.lbs. hr.	30	125	100		300
Water Absorption 24 hrs	% by wt.	2.00	0.30	0.50	0.18	0.60
THERMAL						
Coefficient of Linear Expansion (-40°F to 300°F)	in./in./°F	9.3 x 10 ⁻⁵	1.8 x 10 ⁻⁵	1.95 x 10 ⁻⁵	1.7 x 10 ⁻⁵	2.8 x 10 ⁻⁵
Heat Deflection Temperature @264 psi	°F	225	410	410	500	520
Tg-Glass Transition (amorphous)	°F		410	410		527
Melting Point (Crystalline)	°F	320			644	
Continuous Service Temperature in Air	°F	180	338	340	475	500
Thermal Conductivity	°F		2.45	1.51		2.60
ELECTRICAL						
Dielectric Strength, Short Term	Volts/mil					475
Surface Resistivity	Ohms/Sq.	10 ⁹ - 10 ¹⁰	10 ⁴ - 10 ⁶	10 ⁶ - 10 ⁹	10 ⁶ - 10 ⁹	10 ¹⁰ - 10 ¹²
Dielectric Constant	1 MHz	4.31	3.00	5.63		5.76
Dissipation Factor	1 MHz	0.036	0.0013	0.266		0.182

(Properties listed above are provided for reference only, they should not be used for design specifications or quality control , Semitron is a registered Trademark of Quadrant EPP)

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