

Semitron® ESd 520HR (Polyamide-imide, static dissipative)

Semitron ESd 520HR is designed for use in the semiconductor industry, where electrostatic dissipation is a requirement. It is a compression-molded, static dissipative PAI that combines high heat and chemical resistance with incredible dimensional stability. It also offers consistent static dissipation that withstands exposure to higher voltages without dielectric breakdown.

Property	ASTM Test Method	Units	Semitron® ESd 520HR
Physical			
Specific Gravity	D792	—	1.58
Water Absorption Immersion, 24 hr.	D570	%	0.6
Water Absorption Immersion, Sat	D570	%	4.6
Mechanical			
Tensile Strength	D638	psi	12,000
Tensile Modulus	D638	psi	800,000
Elongation	D638	%	3
Flexural Strength	D790	psi	20,000
Flexural Modulus	D790	psi	850,000
Shear Strength	D732	psi	12,600
Compressive Strength	D695, 10% Def	psi	30,000
Compressive Modulus	D695	psi	600,000
Hardness, Rockwell	D785		M 108
Izod Impact (Notched)	D256 Type A	ft-lb/in	0.8
Coefficient of Friction, Dynamic	Dry vs. Steel, PTM55007		0.24
Limiting PV	PTM55007	psi-fpm	27,000
k (wear) factor	PTM55007	in ³ -min/lb-ft-hr	300 x 10 ⁻¹⁰
Thermal			
Coefficient of Thermal Expansion	E831 (TMA)	in/in/°F	0.15 x 10 ⁻⁴
Deflection Temperature, 264 psi	D648	°F	520
Tg-Glass Transition (Amorphous)	D3418	°F	527
Continuous Service in Air (Max), Without Load		°F	500
Thermal Conductivity		BTUin/hr-ft ² -°F	2.48
Flammability UL94			V-0
Electrical			
Surface Resistance	10 ¹⁰ - 10 ¹² Ohm; EOS/ESD S11.11	ohm/square	10 ¹¹
Dielectric Constant, 1 MHz	D150 (2)		5.76
Dissipation Factor, 1 MHz	D150 (2)		1.82

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.