



Polyamide-imide - ESd 520HR



Semitron® ESd 520HR - Polyamide-imide, static dissipative, compression molded

Semitron® ESd 520HR has an industry first combination of electrostatic dissipation (ESd), high strength and heat resistance. This new ESd material is ideal for making nests, sockets and contactors for test equipment and other device handling components. The key features of 520HR are its unique ability to resist dielectric breakdown at high voltages (>100V). Typical carbon fiber enhanced products become irreversibly more conductive when exposed to even moderate voltage.

Only Semitron® ESd 520HR maintains its performance throughout the voltage range, while offering the mechanical performance needed to excel in demanding applications.

- Surface resistivity: 10^{10} – 10^{12} /sq

Compression	Rod	Disc	Plate	Tubular Bar	Other
Semitron® ESd 520HR PAI	-	-	.375"- 1.5" (C,E,F)	-	-

Key: C = 12" wide x 12" long E = 12" wide x 24" long F = 14" wide x 28" long

MECHANICAL PROPERTIES

	VALUES	ASTM/COMMENTS
Specific Gravity	1.58	D792
Tensile Strength, psi	12000	D638
Tensile Modulus, psi 800000D638		
Elongation, %	3	D638
Flexural Strength, psi	20000	D790
Flexural Modulus, psi	850000	D790
Compressive Strength, psi	30000	D695, 10% Def.
Compressive Modulus, psi	600000	D695
Hardness, Rockwell M	108	D785
Izod Impact (Notched), ft-lb/in	0.8	D256 Type A
Limiting PV, psi-fpm	25000	PTM55010
k (wear) factor, 10-10in3-min/lb-ft-hr	300	PTM55010

THERMAL PROPERTIES

Coefficient of Thermal Expansion, 10E-4/°F	0.15	E831 (TMA)
Deflection Temperature 264 psi, °F	520	D648
Tg-Glass Transition (Amorphous), °F	527	D3418
Continuous Service in Air (Max), °F	500	Without Load

ELECTRICAL PROPERTIES

Volume Resistivity, Ohm-cm	1E+11	1E+10 to 1E+12 Ohm-cm; D257
----------------------------	-------	-----------------------------

CHEMICAL PROPERTIES

Water Absorption Immersion, 24 hr., %	0.6	24 hour immersion
Water Absorption Immersion Sat, %	1.5	saturation immersion
Acids, Weak (acetic, dilute HCl)	3	Acceptable Service
Acids, Strong (conc. HCl or sulfuric)	3	Acceptable Service
Alkalies, Weak (dilute NaOH)	2	Limited Service
Alkalies, Strong (conc. NaOH)	1	Unacceptable
Hydrocarbons, Aromatic (toluene)	3	Acceptable Service
Hydrocarbons, Aliphatic (gasoline)	3	Acceptable Service
Ketones, Esters (acetone)	3	Acceptable Service
Ethers (diethyl ether, THF)	3	Acceptable Service
Chlorinated Solvents (methylene chloride)	3	Acceptable Service
Alcohols (methanol, anti-freeze)	3	Acceptable Service
Inorganic Salt Solutions (NaCl, KCl)	3	Acceptable Service
Continuous Sunlight	2	Limited Service
Steam	1	Unacceptable

COMPLIANCE

Flammability, UL94 (5=V-0; 4=V-1; 3=V-2; 1=HB)	5 (V-0)	V-0 UL 94		
FDA (1=Yes)	0	Not Compliant	USDA (1=Yes)	0 Not Compliant
NSF (1=Yes)	0	Not Compliant	3A-Dairy (1=Yes)	0 Not Compliant
Canada AG (1=Yes)	0	Not Compliant	USP Class VI (1=Yes)	0 Not Compliant