

Quadrant EPP Semitron® ESd 520HR (ASTM Product Data Sheet)

Category : Polymer , Thermoplastic , Polyamide-imide (PAI) , Polyamide-Imide, Molded

Material Notes:

Order this product through the following link:

http://www.lookpolymers.com/polymer_Quadrant-EPP-Semitron-ESd-520HR-ASTM-Product-Data-Sheet.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.58 g/cc	1.58 g/cc	ASTM D792
Water Absorption	0.60 %	0.60 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	4.6 %	4.6 %	Immersion; ASTM D570(2)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	108	108	ASTM D785
Tensile Strength	82.7 MPa	12000 psi	ASTM D638
Elongation at Break	3.0 %	3.0 %	ASTM D638
Tensile Modulus	5.52 GPa	800 ksi	ASTM D638
Flexural Strength	138 MPa	20000 psi	ASTM D790
Flexural Modulus	5.86 GPa	850 ksi	ASTM D790
Compressive Strength	207 MPa	30000 psi	10% Def.; ASTM D695
Compressive Modulus	4.14 GPa	600 ksi	ASTM D695
Shear Strength	86.9 MPa	12600 psi	ASTM D732
Izod Impact, Notched	0.427 J/cm	0.800 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.24	0.24	Dry vs. Steel; QTM55007
K (wear) Factor	604 x 10 ⁻⁸ mm ³ /N-M	300 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.946 MPa-m/sec	27000 psi-ft/min	4:1 safety factor; QTM 55007

Thermal Properties	Metric	English	Comments
CTE, linear	50.4 µm/m-°C	28.0 µin/in-°F	ASTM E831
	@Temperature -40.0 - 149 °C	@Temperature -40.0 - 300 °F	
Thermal Conductivity	0.357 W/m-K	2.48 BTU-in/hr-ft ² -°F	ASTM F433

Thermal Properties <small>Temperature, Air</small>	Metric	English	Comments
Deflection Temperature at 1.8 MPa (264 psi)	271 °C	520 °F	ASTM D648
Glass Transition Temp, Tg	275 °C	527 °F	ASTM D3418
Flammability, UL94	V-0	V-0	1/8 inch (Estimated Rating)

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	1.00e+10 - 1.00e+12 ohm	1.00e+10 - 1.00e+12 ohm	EOS/ESD S11.11
Dielectric Constant	5.76 @Frequency 1e+6 Hz	5.76 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	18.7 kV/mm	475 kV/in	Short Term; ASTM D149
Dissipation Factor	0.182 @Frequency 1e+6 Hz	0.182 @Frequency 1e+6 Hz	ASTM D150

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
Canada AG	No	No	
FDA	No	No	
NSF	No	No	
USDA	No	No	
USP Class VI	No	No	

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Limited	Limited	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Limited	Limited	
Chlorinated Solvents	Acceptable	Acceptable	
Conductive / Static Dissipative	Yes	Yes	

Continuous Sunlight Chemical Resistance Properties	Limited Metric	Limited English	Comments
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	

Descriptive Properties	Value	Comments
Machinability	4	1-10, 1=Easier to Machine

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