

Product Data Sheet

Product : Quadrant Polypenco Korea SEMITRON ESD - PA6, unfilled, cast

Categories : Polymer; Thermoplastic; Nylon ; Nylon 6; Nylon 6 , Cast

Material Notes : Semitron ESD 210 is part of the Quadrant Polypenco Korea family of products designed for use in the semiconductor industry. Data provided by Quadrant Polypenco Korea.

Properties	Units	Test Methods	SEMITRON ESD
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Physical Properties

Specific Gravity	g/cc	ASTM D 792	1.19
Water Absorption, Immersion, 24hr	%	ASTM D 570(2)	0.3
Water Absorption at Saturation, Immersion	%	ASTM D 570(2)	1.1

Mechanical Properties

Rockwell Hardness, M	M scale	ASTM D 785	-
Rockwell Hardness, R	R scale	ASTM D 785	104
Hardness, Shore D	D	ASTM D 2240	-
Tensile Strength	MPa	ASTM D 638	65
Tensile Modulus	GPa	ASTM D 638	2.88
Elongation at Break	%	ASTM D 638	4.0
Flexural Yield Strength	MPa	ASTM D 790	73.9
Flexural Modulus	GPa	ASTM D 790	2.27
Compressive Strength	MPa	10% Def.; ASTM D 695	98
Compressive Modulus	GPa	ASTM D 695	4.14
Shear Strength	MPa	ASTM D 732	68
Coefficient of Friction; Dry vs. Steel	-	QTM 55007	0.20
K (wear) Factor	mm ³ /N-M	QTM 55010	252 x 10 ⁻⁸
Limiting Pressure Velocity; 4:1 safety factor	MPa-m/sec	QTM 55007	0.420
Izod Impact, Notched	J/m	ASTM D 256	32

Electrical Properties

Surface Resistivity per Square	Ω	EOS/ESD S11.11	1X10 ⁴ ~ 1X10 ⁶
Dielectric Constant	-	ASTM D 150	3.0 @Frequency 1e+6 Hz
Dielectric Strength; Short term	kV/mm	ASTM D 149	0.0013

Thermal Properties

Coefficient of Thermal Expansion; CTE, linear	µm/m-°C	ASTM E 831	32.4 @Temperature -40.0 - 149 °C
Thermal Conductivity	W/m-K	ASTM F 433	0.353
Melting point ; Crystalline, Peak	°C	ASTM D 3418	225
Maximum Service Temperature, Air	°C	Long Term	-
Deflection Temperature at 1.8 Mpa (264psi)	°C	ASTM D 648	93
Flammability, UL94 ; 1/8inch(Estimated Rating)	-	-	HB

Compliance Property

Comments

SVHC (Substance of Very High Concern)_REACH	Yes
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Descriptive Properties

Color	BLACK
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Chemical Resistance Properties

Acid, Strong (pH1-3)	Unacceptable
Acids, Weak	Limited
Alcohols	Limited
Alkalies, Weak	Unacceptable
Alkalies, Strong (pH 11-14)	Limited
Chlorinated Solvent	Limited
Conductive / Static Dissipative	No
Continuous Sunlight	Limited
Hot Water / Steam	Limited
Hydrocarbons – Aliphatic	Acceptable
Hydrocarbons – Aromatic	Acceptable
Inorganic Salt Solution	Acceptable
Ketones, Esters	Acceptable

Miscellaneous Properties

Targeted Usage	Load + Bearing
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