

Product Data Sheet

Product : Quadrant Polypenco Korea Acetron® ESD POM, Unfilled, Porosity-free copolymer acetal, extruded

Categories : Polymer; Thermoplastic; Acetal(POM); Acetal Copolymer; Unreinforced

Material Notes : Semitron ESd POM is part of the Quadrant family of products designed for use in the semiconductor industry, where electrostatic dissipation is a requirement. It is an extruded, static dissipative acetal that has mechanical performance to 225°F, high surface resistivity, and broad chemical resistance.

Properties	Units	Test Methods	Acetron® ESD POM
Physical Properties			
Specific Gravity	g/cc	ASTM D 792	1.31
Water Absorption, Immersion, 24hr	%	ASTM D 570(2)	2.0
Water Absorption at Saturation, Immersion	%	ASTM D 570(2)	8.0
Mechanical Properties			
Rockwell Hardness, M	M scale	ASTM D 785	-
Rockwell Hardness, R	R scale	ASTM D 785	105
Hardness, Shore D	D	ASTM D 2240	-
Tensile Strength	MPa	ASTM D 638	41.4
Tensile Modulus	GPa	ASTM D 638	1.36
Elongation at Break	%	ASTM D 638	32
Flexural Yield Strength	MPa	ASTM D 790	42.9
Flexural Modulus	GPa	ASTM D 790	1.28
Compressive Strength	MPa	10% Def.; ASTM D 695	55.2
Compressive Modulus	GPa	ASTM D 695	1.21
Shear Strength	MPa	ASTM D 732	41.4
Coefficient of Friction; Dry vs. Steel	-	QTM 55007	0.29
K (wear) Factor	mm ³ /N-M	QTM 55010	60.4 x 10 ⁻⁸
Limiting Pressure Velocity; 4:1 safety factor	MPa-m/sec	QTM 55007	0.0701
Izod Impact, Notched	J/cm	ASTM D 256	171
Electrical Properties			
Surface Resistivity per Square	Ω	EOS/ESD S11.11	10 ⁶ ~10 ⁸
Dielectric Constant	-	ASTM D 150	4.31 @Frequency 1e+6 Hz

Dielectric Strength; Short term	kV/mm	ASTM D 149	-
Dissipation Factor	-	ASTM D 150	0.036 @Frequency 1e+6 Hz

Thermal Properties

Coefficient of Thermal Expansion; CTE, linear	µm/m-°C	ASTM E 831	167 @Temperature -40.0 - 149 °C
Thermal Conductivity	W/m-K	ASTM F 433	-
Melting point ; Crystalline, Peak	°C	ASTM D 3418	160
Maximum Service Temperature, Air	°C	Long Term	82.2
Deflection Temperature at 1.8 Mpa (264psi)	°C	ASTM D 648	107
Flammability, UL94 ; 1/8inch(Estimated Rating)	-	-	HB

Compliance Property

Comments

3A-Dairy	No
Canada AG	No
FDA	No
NSF	No
USDA	No
RoHS	-

Descriptive Properties

Color	Natural / Black
Machinability	1-10, 1=Easier to Machine
	1

Chemical Resistance Properties

Acid, Strong (pH1-3)	Unacceptable
Acids, Weak	Limited
Alcohls	Acceptable
Alkalies, Weak	Acceptable
Alkalies, Strong (pH 11-14)	Unacceptable
Chlorinated Solvent	Limited
Conductive / Static Dissipative	Yes
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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