

Semitron® ESd 225, Copolymer acetal, static dissipative, extruded

Search Categories: Acetal; ;

Material Notes: Semitron ESd 225HR is part of the Quadrant EPP 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.

MECHANICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Specific Gravity	1.33	ASTM D792	1.33
Tensile Strength, psi	5400	ASTM D638	37 MPa
Tensile Modulus, psi	200000	ASTM D638	1,379 MPa
Elongation, %	15	ASTM D638	15 %
Flexural Strength, psi	7300	ASTM D790	50 MPa
Flexural Modulus, psi	220000	ASTM D790	1,517 MPa
Shear Strength, psi	6000	ASTM D732	41 MPa
Compressive Strength, psi	8000	ASTM D695, 10% Def.	55 MPa
Compressive Modulus, psi	175000	ASTM D695	1,207 MPa
Hardness, Rockwell M	50	ASTM D785	50
Hardness, Rockwell R	108	ASTM D785	108
Hardness, Durometer, Shore D Scale	76	ASTM D2240	76
Izod Impact (Notched), ft-lb/in	1.5	ASTM D256 Type A	80 J/m
Coefficient of Friction, Dynamic	0.29	Dry vs. Steel, PTM55007	0.29
Limiting PV, psi-fpm	2000	PTM55007	0.07 MPa-m/sec
k (wear) factor, 10 ⁻¹⁰ in ³ -min/lb-ft-hr	30	PTM55007	30 10 ⁻¹⁰ in ³ -min/lb-ft-hr
THERMAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Coefficient of Thermal Expansion, 10E-4/°F	0.93	ASTM E831 (TMA)	1.7 10 ⁻⁴ /K
Deflection Temperature 264 psi, °F	225	ASTM D648	107 °C
Melting Point (Crystalline) Peak, °F	320	ASTM D3418	160 °C
Continuous Service in Air (Max), °F	180	Without Load	82 °C
ELECTRICAL PROPERTIES	VALUES	COMMENTS	METRIC VALUES
Surface Resistance, Ohm/Square	5E+09	10 ⁹ - 10 ¹⁰ Ohm; EOS/ESD S11.11	5E+09 Ohm/Square
CHEMICAL PROPERTIES	ENGLISH VALUES	COMMENTS	METRIC VALUES
Water Absorption Immersion, 24 hr., %	2	ASTM D570	2 %
Water Absorption Immersion Sat, %	8	ASTM D570	8 %
Acids, Weak (acetic, dilute HCl)	2	Limited Service	2
Acids, Strong (conc. HCl or sulfuric)	1	Unacceptable	1

Alkalies, Weak (dilute NaOH)	3	Acceptable Service	3
Alkalies, Strong (conc. NaOH)	1	Unacceptable	1
Hydrocarbons, Aromatic (toluene)	3	Acceptable Service	3
Hydrocarbons, Aliphatic (gasoline)	3	Acceptable Service	3
Ketones, Esters (acetone)	3	Acceptable Service	3
Ethers (diethyl ether, THF)	3	Acceptable Service	3
Chlorinated Solvents (methylene chloride)	2	Limited Service	2
Alcohols (methanol, anti-freeze)	3	Acceptable Service	3
Inorganic Salt Solutions (NaCl, KCl)	3	Acceptable Service	3
Continuous Sunlight	2	Limited Service	2
Steam	2	Limited Service	2
COMPLIANCE	ENGLISH VALUES	COMMENTS	METRIC VALUES
Flammability, UL94 (5=V-0; 4=V-1; 3=V-2; 1=HB)	1 (HB)	UL94	1
FDA (1=Yes)	0	Not Compliant	0
USDA (1=Yes)	0	Not Compliant	0
NSF (1=Yes)	0	Not Compliant	0
3A-Dairy (1=Yes)	0	Not Compliant	0
Canada AG (1=Yes)	0	Not Compliant	0
USP Class VI (1=Yes)	0	Not Compliant	0