MITSUBISHI CHEMICAL ADVANCED MATERIALS

Mitsubishi Chemical Advanced Materials Semitron® ESd 420 V (ASTM Product Data Sheet)

Categories:	Polymer; Thermoplastic; Polyetherimide (PEI)
Material Notes:	Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	1.51 g/cc	1.51 g/cc	ASTM D792
Water Absorption	0.21 %	0.21 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	1.4 %	1.4 %	Immersion; ASTM D570(2)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell E	78	78	ASTM D785
Hardness, Rockwell M	110	110	ASTM D785
Tensile Strength	68.9 MPa	10000 psi	ASTM D638
Tensile Strength at 150°C (300°F)	17.2 MPa	2500 psi	ASTM D638
Tensile Strength at 65°C (150°F)	34.5 MPa	5000 psi	ASTM D638
Elongation at Break	1.5 %	1.5 %	ASTM D638
Tensile Modulus	6.27 GPa	910 ksi	ASTM D638
Flexural Strength	109 MPa	15800 psi	ASTM D790
Flexural Modulus	6.27 GPa	910 ksi	ASTM D790
Compressive Strength	154 MPa	22300 psi	10% Def.; ASTM D695
Compressive Modulus	3.76 GPa	545 ksi	ASTM D695
Izod Impact, Notched	0.267 J/cm	0.500 ft-lb/in	ASTM D256 Type A

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	1.00e+6 - 1.00e+9 ohm	1.00e+6 - 1.00e+9 ohm	EOS/ESD S11.11

Thermal Properties	Metric	English	Comments
CTE, linear	27.0 µm/m-°C @Temperature -40.0 - 149 °C	15.0 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Maximum Service Temperature, Air	171 °C	340 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	216 °C	420 °F	ASTM D648
Glass Transition Temp, Tg	216 °C	420 °F	ASTM D3418
Flammability, UL94	V-0 @Thickness 3.17 mm	V-0 @Thickness 0.125 in	Estimated Rating

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)	Unacceptable	Unacceptable	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Unacceptable	Unacceptable	
Conductive / Static Dissipative	Yes	Yes	
Continuous Sunlight	Acceptable	Acceptable	
Hot Water / Steam	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Limited	Limited	
Hydrocarbons - Aromatic	Unacceptable	Unacceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Unacceptable	Unacceptable	

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

Mitsubishi Chemical Advanced Materials Inc. • 2120 Fairmont Avenue • P.O. Box 14235 • Reading, PA 19612-4235
Tel: (610) 320-6660 • Fax: (610) 320-6866

Email: info@polymershapes.com
Call: 1 (866) 437-7427
www.polymershapes.com

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