

Mitsubishi Chemical Advanced Materials Semitron® MDS 100 (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Polyketone; Polyetheretherketone (PEEK)

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	0.10 %	0.10 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.58 %	0.58 %	ASTM D 570(2)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	121	121	ASTM D785
Tensile Strength	101 MPa	14700 psi	ASTM D638
Tensile Strength at 150°C (300°F)	68.9 MPa	10000 psi	ASTM D638
Tensile Strength at 65°C (150°F)	82.7 MPa	12000 psi	ASTM D638
Elongation at Break	1.5 %	1.5 %	ASTM D638
Tensile Modulus	10.3 GPa	1500 ksi	ASTM D638
Flexural Strength	141 MPa	20500 psi	ASTM D790
Flexural Modulus	9.79 GPa	1420 ksi	ASTM D790
Compressive Strength	168 MPa	24400 psi	10% Def.; ASTM D695
Compressive Modulus	7.58 GPa	1100 ksi	ASTM D695
Shear Strength	83 MPa	12000 psi	ASTM D732
Izod Impact, Notched	0.21 J/cm	0.40 ft-lb/in	ASTM D256 Type A

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	>= 1.00e+13 ohm	>= 1.00e+13 ohm	ASTM D257
Dielectric Constant	3.37 @Frequency 1.00e+6 Hz	3.37 @Frequency 1.00e+6 Hz	ASTM D150
Dielectric Strength	14.3 kV/mm	362 kV/in	Short Term; ASTM D149
Dissipation Factor	0.0070 @Frequency 1.00e+6 Hz	0.0070 @Frequency 1.00e+6 Hz	ASTM D150

Thermal Properties	Metric	English	Comments
CTE, linear	19.8 µm/m-°C @Temperature -40.0 - 150 °C	11.0 µin/in-°F @Temperature -40.0 - 302 °F	ASTM E831
Thermal Conductivity	0.249 W/m-K	1.73 BTU-in/hr-ft²-°F	
Melting Point	340 °C	644 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	249 °C	480 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	210 °C	410 °F	ASTM D648

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)	Acceptable	Acceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Acceptable	Acceptable	
Conductive / Static Dissipative	No	No	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	



Email: info@polymershapes.com

Call: 1 (866) 437-7427

www.polymershapes.com