

**Mitsubishi Chemical Advanced Materials Semitron® MP-370 (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	1.62 g/cc	1.62 g/cc	ASTM D792
Water Absorption	0.11 %	0.11 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.50 %	0.50 %	ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	98	98	ASTM D785
Tensile Strength	79.3 MPa	11500 psi	ASTM D638
Tensile Strength at 150°C (300°F)	20.7 MPa	3000 psi	ASTM D638
Tensile Strength at 65°C (150°F)	68.9 MPa	10000 psi	ASTM D638
Elongation at Break	3.0 %	3.0 %	ASTM D638
Tensile Modulus	4.41 GPa	640 ksi	ASTM D638
Flexural Strength	115.5 MPa	16750 psi	ASTM D790
Flexural Modulus	4.31 GPa	625 ksi	ASTM D790
Compressive Strength	125 MPa	18200 psi	10% Def.; ASTM D695
Compressive Modulus	4.14 GPa	600 ksi	ASTM D695
Shear Strength	77.9 MPa	11300 psi	ASTM D732
Izod Impact, Notched	0.214 J/cm	0.400 ft-lb/in	ASTM D256
K (wear) Factor	$\geq 1010 \times 10^{-8} \text{ mm}^3/\text{N}\cdot\text{M}$	$\geq 500 \times 10^{-10} \text{ in}^3\cdot\text{min}/\text{ft}\cdot\text{lb}\cdot\text{hr}$	QTM55010
Limiting Pressure Velocity	0.0771 MPa-m/sec	2200 psi-ft/min	4:1 safety factor; QTM 55007

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00\text{e}+15 \text{ ohm}\cdot\text{cm}$	$\geq 1.00\text{e}+15 \text{ ohm}\cdot\text{cm}$	EOS/ESD S11.11
Surface Resistivity per Square	$\geq 1.00\text{e}+13 \text{ ohm}$	$\geq 1.00\text{e}+13 \text{ ohm}$	EOS/ESD S11.11
Dielectric Constant	4.13 @Frequency 1.00e+6 Hz	4.13 @Frequency 1.00e+6 Hz	ASTM D150
Dielectric Strength	14.8 kV/mm	376 kV/in	ASTM D149
Dissipation Factor	0.0040 @Frequency 1e+6 Hz	0.0040 @Frequency 1e+6 Hz	ASTM D150

Thermal Properties	Metric	English	Comments
CTE, linear	45.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature -40.0 - 149 °C	25.0 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature -40.0 - 300 °F	ASTM E831
Thermal Conductivity	0.340 W/m-K	2.36 BTU-in/hr-ft <sup>2</sup> -°F	ASTM F433
Melting Point	340 °C	644 °F	
Maximum Service Temperature, Air	249 °C	480 °F	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	149 °C	300 °F	ASTM D648
Flammability, UL94	V-0 @Thickness 3.17 mm	V-0 @Thickness 0.125 in	Crystalline; ASTM D3418

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



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