

**Mitsubishi Chemical Advanced Materials Fluorosint® HPV Mica-filled PTFE (ASTM Product Data Sheet)**
**Categories:** Polymer; Thermoplastic; Fluoropolymer; Polytetrafluoroethylene (PTFE)

**Material Notes:** Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	2.06 g/cc	2.06 g/cc	ASTM D792
Water Absorption	0.15 %	0.15 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.43 %	0.43 %	Immersion; ASTM D570(2)
Deformation	3.2 %	3.2 %	2000 psi; 122°F (50°C)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	44	44	ASTM D785
Hardness, Shore D	61	61	ASTM D2240
Tensile Strength	10.0 MPa	1450 psi	ASTM D638
Tensile Strength at 150°C (300°F)	3.45 MPa	500 psi	ASTM D638
Tensile Strength at 65°C (150°F)	6.89 MPa	1000 psi	ASTM D638
Elongation at Break	65 %	65 %	ASTM D638
Tensile Modulus	1.45 GPa	210 ksi	ASTM D638
Flexural Strength	17.2 MPa	2500 psi	ASTM D790
Flexural Modulus	1.14 GPa	165 ksi	ASTM D790
Compressive Strength	20.7 MPa	3000 psi	10% Def.; ASTM D695
Compressive Modulus	0.758 GPa	110 ksi	ASTM D695
Shear Strength	17.2 MPa	2500 psi	ASTM D732
Izod Impact, Notched	0.961 J/cm	1.80 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.15	0.15	Dry vs. Steel; QTM 55007
K (wear) Factor	76.5 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	38.0 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.7006 MPa-m/sec	20000 psi-ft/min	4:1 safety factor; QTM 55007

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	>= 1.00e+13 ohm	>= 1.00e+13 ohm	EOS/ESD S11.11

Thermal Properties	Metric	English	Comments
CTE, linear	88.2 µm/m-°C @Temperature -40.0 - 149 °C	49.0 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Melting Point	327 °C	621 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	260 °C	500 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	82.2 °C	180 °F	ASTM D648
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	Yes	Yes	
NSF	No	No	
USDA	No	No	
USP Class VI	No	No	

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Acceptable	Acceptable	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Acceptable	Acceptable	
Conductive / Static Dissipative	No	No	
Continuous Sunlight	Acceptable	Acceptable	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	

**Descriptive Properties**

Machinability

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1-10, 1=Easier to Machine



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