MITSUBISHI CHEMICAL ADVANCED MATERIALS

Mitsubishi Chemical Advanced Materials Fluorosint® 207 PTFE, Compression Molded Synthetic Mica-filled PTFE (ASTM Product Data Sheet)

Categories:	Polymer; Thermoplastic; Fluoropolymer; Polytetrafluoroethylene (PTFE); Polytetrafluoroethylene (PTFE), Mica Filled
Material Notes:	Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.
Key Words:	Polytetrafluoroethylene

Physical Properties	Metric	English	Comments
Specific Gravity	2.30 g/cc	2.30 g/cc	ASTM D792
Water Absorption	0.030 %	0.030 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.20 %	0.20 %	Immersion; ASTM D570(2)
Deformation	1.1 %	1.1 %	2000 psi; 122°F (50°C)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	50	50	ASTM D785
Hardness, Shore D	65	65	ASTM D2240
Tensile Strength	10.3 MPa	1500 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	50 %	50 %	ASTM D638
Tensile Modulus	1.72 GPa	250 ksi	ASTM D638
Flexural Strength	13.8 MPa	2000 psi	ASTM D790
Flexural Modulus	2.41 GPa	350 ksi	ASTM D790
Compressive Strength	26.2 MPa	3800 psi	10% Def.; ASTM D695
Compressive Modulus	1.55 GPa	225 ksi	ASTM D695
Shear Strength	11.7 MPa	1700 psi	ASTM D732
Izod Impact, Notched	0.534 J/cm	1.00 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.10	0.10	Dry vs. Steel; QTM55007
K (wear) Factor	171 x 10^{-8} mm³/N-M	85.0 x 10^{-10} in³-min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.280 MPa-m/sec	8000 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
Dielectric Constant	2.65 @Frequency 1e+6 Hz	2.65 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	7.87 kV/mm	200 kV/in	Short Term; ASTM D149
Dissipation Factor	0.0080 @Frequency 1e+6 Hz	0.0080 @Frequency 1e+6 Hz	ASTM D150

Thermal Properties	Metric	English	Comments
CTE, linear	103 µm/m-°C @Temperature -40.0 - 149 °C	57.0 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Thermal Conductivity	0.440 W/m-K	3.05 BTU-in/hr-ft²-°F	
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)	98.9 °C	210 °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	Yes	Yes	
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	

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Alkalies, Weak	Acceptable	Acceptable
Chlorinated Solvents	Acceptable	Acceptable
Conductive / Static Dissipative	Yes	Yes
Continuous Sunlight	Acceptable	Acceptable
Hot Water / Steam	Limited	Limited
Hydrocarbons - Aliphatic	Acceptable	Acceptable
Hydrocarbons - Aromatic	Acceptable	Acceptable
Inorganic Salt Solutions	Acceptable	Acceptable
Ketones, Esters	Acceptable	Acceptable

Descriptive Properties

Color	Natural	
Machinability	2	1-10, 1=Easier to Machine