

## Mitsubishi Chemical Advanced Materials Fluorosint® 135 PTFE and PPS Blend, with Proprietary Lubrication Fillers (ASTM Product Data Sheet)

**Categories:** Polymer; Thermoplastic; Fluoropolymer; Polytetrafluoroethylene (PTFE); Polyphenylene Sulfide (PPS)

- Material Notes:**
- 1 Chemical resistance parallels PTFE
  - 1 Continuous use temperatures to 500°F (260°C)
  - 1 Compared to PTFE
  - 1 higher load carrying capability
  - 1 1/9 of the deformation under load
  - 1 lower coefficient of thermal expansion
  - 1 High maximum allowable service temperature in air (260°C continuously)
  - 1 Excellent chemical and hydrolysis resistance
  - 1 Outstanding UV- and weather resistance
  - 1 Physiologically inert (suitable for food contact, except Fluorosint 500, Fluorosint MT-01)
  - 1 Inherent low flammability
  - 1 Good bearing and wear material

Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	1.91 g/cc	1.91 g/cc	ASTM D792
Water Absorption	0.1 %	0.1 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.3 %	0.3 %	Immersion; ASTM D570(2)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	80	80	ASTM D785
Hardness, Shore D	74	74	ASTM D2240
Tensile Strength	8.96 MPa	1300 psi	ASTM D638
Elongation at Break	3.0 %	3.0 %	ASTM D638
Tensile Modulus	2.55 GPa	370 ksi	ASTM D638
Flexural Strength	17.2 MPa	2500 psi	ASTM D790
Flexural Modulus	2.07 GPa	300 ksi	ASTM D790
Compressive Strength	48.3 MPa	7000 psi	10% Def.; ASTM D695
Compressive Modulus	1.38 GPa	200 ksi	ASTM D695
Shear Strength	17.2 MPa	2500 psi	ASTM D732
Izod Impact, Notched	0.267 J/cm	0.500 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	<= 0.15	<= 0.15	Dry vs. Steel; 20 fpm/250 psi; QTM55007
Coefficient of Friction, Static	<= 0.20	<= 0.20	50 lb load, 90° rotation; QTM55007
K (wear) Factor	64.5 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	32.0 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.501 MPa-m/sec	14300 psi-ft/min	4:1 safety factor; QTM 55007

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	<= 1e+05	<= 1e+05	EOS/ESD S11.11

Thermal Properties	Metric	English	Comments
CTE, linear	45.0 µm/m-°C @Temperature -40.0 - 149 °C	25.0 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)	104 °C	220 °F	ASTM D648
Flammability, UL94	V-0 @Thickness 3.17 mm	V-0 @Thickness 0.125 in	Estimated Rating

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	Yes	Yes	
Continuous Sunlight	Acceptable	Acceptable	
Ethers	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	

Hydrocarbons - Aromatic	Acceptable	Acceptable
Inorganic Salt Solutions	Acceptable	Acceptable
Ketones, Esters	Acceptable	Acceptable



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