



# Fluorosint 500 (Quadrant)

PTFE, synthetic mica-filled, compression molded

Physical Properties	Metric	English	Comments
Specific Gravity	2.32 g/cc	0.0838 lb/in <sup>3</sup>	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)
Deformation	5 %	5 %	2000 psi; 122°F (50° C)

## Mechanical Properties

Hardness, Rockwell R	55	55	ASTM D785
Hardness, Shore D	70	70	ASTM D2240
Tensile Strength, Ultimate	7.58 MPa	1100 psi	ASTM D638
Elongation at Break	30 %	30 %	ASTM D638
Tensile Modulus	2.07 GPa	300 ksi	ASTM D638
Flexural Modulus	3.45 GPa	500 ksi	ASTM D790
Flexural Yield Strength	15.2 MPa	2200 psi	ASTM D790
Compressive Strength	27.6 MPa	4000 psi	10% Def.; ASTM D695
Compressive Modulus	1.72 GPa	250 ksi	ASTM D695
Shear Strength	14.5 MPa	2100 psi	ASTM D732
Coefficient of Friction	0.15	0.15	Dry vs. Steel; QTM55007
K (wear) Factor	1210 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	600 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.28 MPa-m/sec	8000 psi-ft/min	4:1 safety factor; QTM 55007
Izod Impact, Notched	0.481 J/cm	0.9 ft-lb/in	ASTM D256 Type A

## Electrical Properties

Surface Resistivity per Square	Min 1e+013 ohm	Min 1e+013 ohm	EOS/ESD S11.11
Dielectric Constant	2.85	2.85	1MHz; ASTM D150
Dielectric Strength	10.8 kV/mm	275 V/mil	Short Term; ASTM D149
Dissipation Factor	0.008	0.008	1MHz; ASTM D150

## Thermal Properties

CTE, linear 68°F	45 µm/m-°C	25 µin/in-°F	(-40°F to 300°F); ASTM E831
Thermal Conductivity	0.764 W/m-K	5.3 BTU-in/hr-ft <sup>2</sup> -°F	ASTM F433
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)	132 °C	270 °F	ASTM D648
Flammability, UL94 (Estimated Rating)	V-0	V-0	1/8 inch

## Qualitative Processing Properties

Compliance - FDA	Not Compliant	
Machinability	2	1-10, 1=Easier to Machine
Service in Alcohols	Acceptable	
Service in Aliphatic Hydrocarbons	Acceptable	
Service in Aromatic Hydrocarbons	Acceptable	
Service in Chlorinated Solvents	Acceptable	
Service in Ethers	Acceptable	
Service in Ketones	Acceptable	
Service in Strong Acids	Acceptable	
Service in Strong Alkalies	Unacceptable	
Service in Sunlight	Acceptable	
Service in Weak Acids	Acceptable	
Service in Weak Alkalies	Acceptable	

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