TAMSHELL MANUFACTURING CORPORATION

- Plastics Machining
- Spring Energized Seals
- Rotary Lip Seals

Material Data Sheet

Material: Fluorosint® 500 Modified PTFE

Fluorosint's unique properties are the result of a proprietary process in which synthetically manufactured mica is chemically linked to PTFE. This bonding results in properties not normally attainable in reinforced PTFE. Fluorosint grades offer an excellent combination of low frictional properties and dimensional stability. Fluorosint® 500 has nine times greater resistance to deformation under load than unfilled PTFE. Its coefficient of linear thermal expansion approaches the expansion rate of aluminum, and is 1/5 that of PTFE -- often eliminating fit and clearance problems (see Figure 20). It is 1/3 harder than PTFE, has better wear characteristics and maintains low frictional properties. Fluorosint® 500 is also non-abrasive to most mating materials.

Mechanical Properties	Test Method ASTM	Value	Units
Specific Gravity, 73°F	D792	2.32	
Tensile Strength, 73°F	D638	1,100	psi
Tensile Modulus of Elasticity, °F	D638	300,000	psi
Tensile Elongation (at break), 73°F	D638	10	%
Flexural Strength, 73°F	D790	2,200	psi
Flexural Modulus of Elasticity, 73°F	D790	500,000	psi
Shear Strength, 73°F	D732	2,100	psi
Compressive Strength, 10% Deformation, 73°F	D695	4,000	psi
Compressive Modulus of Elasticity, 73°F	D695	250,000	psi
Hardness, Rockwell, Scale as noted, 73°F	D785	R55	
Hardness, Durometer, Shore "D" Scale, 73°F	D2240	D70	
Izod Impact (notched), 73°F	D256 Type A	0.9	ft-lb/in of notch
Coefficient of Friction (Dry vs. Steel) Dynamic	QTM 55007	0.15	
Limiting PV (with 4:1 safety factor applied)	QTM 55007	8	ft.lbs./in.^{2} min
Wear Factor "k" x 10^{-10}	QTM 55010	600	in.^{3}-min/ft.lbs.hr
Thermal Properties			
Coefficient of Linear Thermal Expansion (-40°F to 300°F)	E-831 (TMA)	2.5 x 10^{-5}	in/in./°F
Heat Deflection Temperature 264 psi	D648	270	°F
TG-Glass transition (amorphous)	D3418	N/A	°F
Melting Point (Crystalline) peak	D3418	621	°F
Continuous Service Temperature in Air (Max.) (1)		500	°F
Thermal Conductivity	F433	5.3	BTU-in/hr-ft^2-°F
Electrical Properties			
Dielectric Strength, Short Term	D149	275	Volts/mil
Surface Resistivity	EOS/ESD S11.11	>10^{13}	ohm/square
Dielectric Constant, 106 Hz	D150	2.85	
Dissipation Factor, 106 Hz	D150	0.008	
Flammability @ 3.1 mm (1/8 in.)	UL 94	V-0	
FDA Compliant		No	

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*The values shown in these and the following charts are typical, average properties. Actual values may differ due to variations in resin formulations and processing methods. These values are obtained from sources believed to be reliable, including the resin manufactures, converters and other published sources. However, they should not be used for specification or design purposes. Above information is provided by Quadrant EPP.