

Material Data Sheet

Material: Quadrant Bearing-Grade PPS

Polyphenylene Sulfide (Ryton®)

This grade is an internally lubricated and carbon fiber reinforced compression molded PPS offering a low coefficient of thermal expansion and uncompromised chemical resistance. It is well suited for and wear applications or when an electrically conductive material is required. PPS (polyphenylene sulfide) products offer the broadest resistance to chemicals of any advanced engineering plastic. They have no known solvents below 392°F (200°C) and offer inertness to steam, strong bases, fuels and acids. Minimal moisture absorption and a very low coefficient of linear thermal expansion, combined with Quadrant's proprietary stress relieving processes, make these PPS products ideally suited for precise tolerance machined components. In addition, PPS products exhibit excellent electrical characteristics and are inherently flame retardant.

Mechanical Properties	Test Method ASTM	Value	Units
Specific Gravity, 73°F	D792	1.52	
Tensile Strength, 73°F	D638	2,100	psi
Tensile Modulus of Elasticity, °F	D638	980,000	psi
Tensile Elongation (at break), 73°F	D638	1	%
Flexural Strength, 73°F	D790	10,000	psi
Flexural Modulus of Elasticity, 73°F	D790	820,000	psi
Shear Strength, 73°F	D732		psi
Compressive Strength, 10% Deformation, 73°F	D695	15,000	psi
Compressive Modulus of Elasticity, 73°F	D695	800,000	psi
Hardness, Rockwell, Scale as noted, 73°F	D785	M93 (R126)	
Hardness, Durometer, Shore "D" Scale, 73°F	D2240	D86	
Izod Impact (notched), 73°F	D256 Type A	1	ft-lb/in of notch
Coefficient of Friction (Dry vs. Steel) Dynamic	QTM 55007	0.2	
Limiting PV (with 4:1 safety factor applied)	QTM 55007	25,000	ft.lbs./in. ² min
Wear Factor "k" x 10 ⁻¹⁰	QTM 55010	800	in. ³ -min/ft.lbs.hr
Thermal Properties			
Coefficient of Linear Thermal Expansion (-40°F to 300°F)	E-831 (TMA)	1.7 x 10 ⁻⁵	in/in./°F
Heat Deflection Temperature 264 psi	D648	490	°F
TG-Glass transition (amorphous)	D3418	N/A	°F
Melting Point (Crystalline) peak	D3418	540	°F
Continuous Service Temperature in Air (Max.) (1)		450	°F
Thermal Conductivity	F433	2.2	BTU-in/hr-ft ² -°F
Electrical Properties			
Dielectric Strength, Short Term	D149		Volts/mil
Surface Resistivity	EOS/ESD S11.11	>10 ⁵	ohm/square
Dielectric Constant, 106 Hz	D150		
Dissipation Factor, 106 Hz	D150		
Flammability @ 3.1 mm (1/8 in.)	UL 94	V-0	
FDA Compliant		No	