

General Information

Chemical Designation: PSU 1000 (Polysulfone) is an amber semi-transparent, heat resistant, high performance engineering thermoplastic. It offers excellent mechanical, electrical and improved chemical resistance properties relative to polycarbonate. Properties remain consistent over a broad temperature range. It is hydrolysis resistant for continuous use in hot water and steam.

PSU (Polysulfone)

Fillers: PSU 1000 Polysulfone offers high chemical resistance to acidic and salt solutions, and good resistance to detergents, hot water, and steam. Polysulfone has excellent radiation stability and offers low ionic impurity levels. It is commonly used for analytical instrumentation, medical devices, and semiconductor process equipment components.

Unfilled

Color: Amber (Transparent)

Specific Gravity: 1.24

Technical Information

Specification	Test	Value	Units
Specific Gravity, 73°F	D792	1.24	-
Tensile Strength @ Yield, 73°F	D638	10,200	psi
Tensile Modulus of Elasticity, 73°F	D638	390,000	psi
Tensile Elongation (at break), 73°F	D638	30	%
Flexural Strength, 73°F	D790	15,000	psi
Flexural Modulus of Elasticity	D790	400,000	psi
Shear Strength, 73°F	D732	9,000	psi
Compressive Strength – Ultimate			psi
Compressive Strength at 2% Deformation	D695		psi
Compressive Strength at 10% Deformation	D695	13,000	psi
Deformation Under Load			%
Compressive Modulus of Elasticity, 73°F	D695	375,000	
Compressive Strength to Laminate (Modulus)			psi
Compressive Strength to Laminate (Yield)			psi
Compressive Strength to Laminate (Ultimate)			psi
Hardness, Durometer (Shore "D" scale)	D2240	D80	
Hardness, Rockwell (Scale as noted)	D785	M82 (R128)	Rockwell M
Izod Impact, Notched @ 73°F	D256 Type A	1.3	ft.lbs/in. of notch
Coefficient of Friction (Dry vs Steel) Static	PTM55007		
Coefficient of Friction (Dry vs Steel) Dynamic	PTM55007	-	
Maximum Static Bearing Load (P)	PTM55007		psi
Maximum Unlubricated No Load Bearing Velocity (V)	PTM55007		ft/minute
Maximum Limiting PV (Unlubricated)	PTM55007	-	psi x ft/min.
Wear Factor "K" x 10-10	PTM55010	-	Cubic in.-min/ft.lbs.hr
Sand Wheel Wear/Abrasion Test			UHMW=100
Minimum Mating Surface Hardness			Rockwell (Brinnell)
Coefficient of Linear Thermal Expansion	E-831(TMA)	3.10	in/in°F x 10-5
Coefficient of Thermal Expansion // to Laminates	E-831(TMA)		in/in°F x 10-5
Coefficient of Thermal Expansion I to Laminates	E-831(TMA)		in/in°F x 10-5
Softening Point			°F
Heat Deflection Temperature 264 psi	D648	340	°F
Embrittlement Temperature			°F Min.
Continuous Service Temperature in Air		300	°F Max.
Short Term Service Temperature			°F Max.
Tg-Glass Transition (Amorphous)	D3418	374	°F
Melting Point (Crystalline) Peak	D3418	N/A	°F
Thermal Conductivity	F433	1.8	BTU-in/(hr/ft2°F)
Dielectric Strength Short Term	D149	425	Volts/mil
Surface Resistivity	D257	>1013	ohm/cm
Volume Resistivity	D257		ohm/cm
Dielectric Constant, 106 Hz	D150	3.14	
Dissipation Factor, 106 Hz	D150	0.0008	
Flammability @ 3.1mm(1/8 in.) UL94	UL94	HB	
Arc Resistance			seconds
Water Absorption, Immersion 24 Hours	D570 (2)	0.3	%
Water Absorption, Immersion Saturation	D570 (2)	0.6	%
Machinability Rating		3	1=easy, 10=difficult
Rod Diameter Availability (Off the Shelf)	.25	6.0	inches
Sheet Thickness Availability (Off the Shelf)	.25	2.50	inches
Characteristics / Attributes	Excellent Chemical Resistance / Easily Machined		

Thank you for your interest in our materials. All statements, technical information and recommendations presented are in good faith, based upon tests believed to be reliable and practical field experience. Poly-Tech is not responsible for its accuracy or completeness. It is our recommendation and the customer's responsibility to determine the suitability of any material for any given application.