

## General Information

**Chemical Designation:** PVDF (Polyvinylidene Fluoride) is a semi-crystalline fluoropolymer. Fluoropolymers are great insulators and have high temperature and chemical resistances. However, they are often soft and susceptible to creep failure. PVDF is a fluoropolymer with relatively high mechanical properties. Typical applications include corrosive environments requiring the chemical resistance of a fluoroplastic, while also needing the higher mechanical properties than a PTFE or PCTFE can provide. It has a long-term service temperature of 300 °F.

**PPS (Polyphenylene Sulfide)**

**Fillers:**

**Unfilled** PVDF is white in color and is available in a wide range of rod and sheet sizes. It is also commonly used to make tubing or films for insulating applications. It is also inherently non-flammable and FDA compliant and therefore commonly utilized in food processing and chemical processing applications. Its electrical and flame properties have lead to PVDF being commonly used in lithium-ion batteries and for cable jackets as well.

**Color:**

White

**Specific Gravity:** It is easily machined with common metal working equipment. Tolerances of +/- .001 can be achieved with experience.

1.78

## Technical Information

Specification	Test	Value	Units
Specific Gravity, 73°F	D792	1.78	-
Tensile Strength @ Yield, 73°F	D638	7,800	psi
Tensile Modulus of Elasticity, 73°F	D638	350,000	psi
Tensile Elongation (at break), 73°F	D638	35	%
Flexural Strength, 73°F	D790	14,700	psi
Flexural Modulus of Elasticity	D790	410,000	psi
Shear Strength, 73°F	D732	-	psi
Compressive Strength – Ultimate			psi
Compressive Strength at 2% Deformation	D695		psi
Compressive Strength at 10% Deformation	D695	11,600	psi
Deformation Under Load			%
Compressive Modulus of Elasticity, 73°F	D695	160,000	
Compressive Strength to Laminate (Modulus)			psi
Compressive Strength to Laminate (Yield)			psi
Compressive Strength to Laminate (Ultimate)			psi
Hardness, Durometer (Shore "D" scale)	D2240	79	
Hardness, Rockwell (Scale as noted)	D785	M79	Rockwell M
Izod Impact, Notched @ 73°F	D256 Type A	1.97	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)	7.1	in/in/°F x 10-5
Coefficient of Thermal Expansion // to Laminates	E-831(TMA)	7.1	in/in/°F x 10-5
Coefficient of Thermal Expansion I to Laminates	E-831(TMA)	7.1	in/in/°F x 10-5
Softening Point			°F
Heat Deflection Temperature 264 psi	D648	235	°F
Embrittlement Temperature		-65	°F Min.
Continuous Service Temperature in Air		300	°F Max.
Short Term Service Temperature		300	°F Max.
Tg-Glass Transition (Amorphous)	D3418	-31	°F
Melting Point (Crystalline) Peak	D3418	342	°F
Thermal Conductivity	F433	1.32	BTU-in/(hr/ft <sup>2</sup> °F)
Dielectric Strength Short Term	D149	510	Volts/mil
Surface Resistivity	D257	>1x10 <sup>10</sup>	ohm/cm
Volume Resistivity	D257	5x10 <sup>14</sup>	ohm/cm
Dielectric Constant, 106 Hz	D150	7.0	
Dissipation Factor, 106 Hz	D150	0.02	
Flammability @ 3.1mm(1/8 in.) UL94	UL94	V-O	
Arc Resistance			seconds
Water Absorption, Immersion 24 Hours	D570 (2)	0.02	%
Water Absorption, Immersion Saturation	D570 (2)	-	%
Machinability Rating		3	1=easy, 10=difficult
Rod Diameter Availability (Off the Shelf)		.375-4.0	inches
Sheet Thickness Availability (Off the Shelf)		.250-2.5	inches
Characteristics / Attributes	Excellent Chemical Resistance/Flame Resistant/ Easily Machined / FDA/ Stable Fluoropolymer		

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.