

## Teflon® PVDF (Polyvinylidene Fluoride)

Polyvinylidene Fluoride, or PVDF, is a fluorinated thermoplastic resin that has outstanding resistance to most mineral and organic acids, aliphatic and aromatic hydrocarbons, alcohols, halogenated solvents, and oxidizing environments. It also has outstanding aging resistance, with its properties remaining constant after many years of continuous use.

- Superior chemical resistance - PVDF has high chemical resistance to strong acids, aliphatics, and aromatics, and to numerous mineral and organic compounds.
- Remarkable fire resistant properties - In the Underwriters' test, PVDF was given the highest classification (V-0), indicating that it was non-flammable and self-extinguishing.
- UV and gamma radiation stability
- Very high dielectric and piezoelectric constants
- Teflon® PVDF is FDA compliant
- Absolutely non-toxic - PVDF can be used in repeated contact with food products. Its surface, like glass, is unfavorable to the proliferation of microorganisms.
- Good mechanical properties in tension as well as in deflection, torsion, and compression compared to other fluorinated polymers.
- Does not swell or alter in a wet environment
- Uses standard machining and welding techniques

Teflon® PVDF's excellent chemical and physical properties and the ease with which it can be processed make it especially suitable for components in the chemical, petrochemical, hydrometallurgical, pharmaceutical, food, nuclear, and paper and pulp industries, as well as the semiconductor processing industry.

Properties	ASTM Test Method		Teflon® PVDF
<b>Physical</b>			
Density	D792	lbs/in <sup>3</sup>	0.064
Specific Gravity	D792	gm/cc	1.78
Water Absorption, 24 hours, 73 F	D570	%	< .04
<b>Mechanical</b>			
Tensile Strength, Break, 73 F	D638	psi	7,800
Tensile Modulus, 73 F	D638	psi	350,000
Elongation, Break, 73 F	D638	%	35
Flexural Strength, 73 F	D790	psi	10,750
Flexural Modulus, 73 F	D790	psi	310,000
Izod Impact Strength, Notched, 73 F	D256	ft-lbs/in	3.0
Rockwell Hardness	D785	"R" scale	100
Compressive Strength	D695	psi	11,600
<b>Thermal</b>			
Deflection Temperature, 66 psi	D648	F	300
Deflection Temperature, 264 psi	D648	F	235
Coefficient of Thermal Expansion	D696	in/in-F	7.1 x 10 <sup>-5</sup>
Melting Point	D3448	F	342
Thermal Conductivity	C177	Btu-in/hr-ft <sup>2</sup> -F	1.32
Flammability	UL94		V-0
<b>Electrical</b>			
Dielectric Strength	D149	V/mil	280
Dielectric Constant, 60 Hz, 73 F, 50% RH	D150		9
Dissipation Factor, 60 Hz, 73 F	D150		0.06
Volume Resistivity, 73 F	D257	ohm-cm	5 x 10 <sup>14</sup>

*NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.*