PVDF Material Properties Data Sheet

PVDF (polyvinylidene fluoride) is a melt-processible homopolymer with a recommended upper continuous-use temperature of 150°C (302°F). PVDF exhibits excellent mechanical strength and toughness, stiffness, high dielectric strength, abrasion resistance, creep resistance, high purity, chemical inertness, low flammability, and low moisture absorption. These properties make PVDF a preferred product in applications, such as, gaskets, pipe, fittings, valves, and pump parts for the semiconductor and chemical processing industry.

Mechanical Property	**ASTM Method**	**Unit**	**Kynar® 1000 HD[1]**	**Hylar® MP-10[2]**
Melt Flow Rate	ISO 1133	g/10 min	1.5-2.5	7-10
Specific Gravity	D-792		1.78	1.78
Water Absorption, 24 hr.	D-570	%	0.03	0.02
Tensile Strength, 23°C	D-638, ISO R-527	psi	7,105	7,395-8,250
Elongation, 23°C	D-638, ISO R-527	%	250	50-250
Compressive Strength, 23°C at 5% strain	D-695	psi	--	--
Impact Strength, 23°C, Notched Izod	D-256	J/m	160	100-200
Flexural Modulus, 23°C	D-790, ISO 178	psi	130×10^3	130×10^3
Durometer Hardness, Shore D	ISO 868	D	80	76-80
Coefficient of Friction	D-1894		--	0.3
Deformation Under Load, 23°C, 1000 psi, 24 hr.	D-621	%	--	--
Thermal Property				
Melting Point	ISO R-527	°C	169	165-168
Deflection Temperature (261 psi)	TMA	°C	114-118	--
Oxygen Index	D-2863	%	43	43
Max. Service Temperature		°C	149	150
Thermal Conductivity		W/m-K	0.17-0.19	0.19-0.22
Flammability	UL 94		V-O	V-O
Electrical Property				
Surface Resistivity	D-257	ohm-sq	--	--
Volume Resistivity	D-257	ohm-cm	1.5×10^{14}	1.1×10^{15}
Dielectric Strength (10 mil) (3.2 mm for MP-10)	D-149	V/mil	1,600	325
Dielectric Constant, 21°C, 10^3 Hz, 60 Hz for MP-10	D-150		8.15-10.46	6.9
Dissipation Factor, 21°C, 60 Hz	D-150		--	0.035
Arc Resistance	D-495	sec	50-60	50-60

[1] Information provided by Atofina

[2] Information provided by Ausimont