

Polyvinylidene Fluoride (PVDF or Kynar®)

Reference Information supplied by our sources:

PVDF

TECHNICAL DESCRIPTION

Kynar® is a high molecular weight crystalline thermoplastic polymer of vinylidene fluoride -- PolyVinylidene Fluoride or PVDF.

GENERAL PROPERTIES

Kynar® has excellent corrosion and chemical resistance and performs in many applications up to 300°F (149°C). It is used extensively in chemical processing applications because of its unique combination of properties. Kynar® PVDF possesses excellent chemical resistance, is tough and durable, and is easily fabricated into finished parts.

KEY PROPERTIES

- Good thermal stability • High tensile strength • High impact resistance • Excellent UV resistance
- Extremely high purity

AGENCY / REGULATORY CONSIDERATIONS

When specified, PVDF stock shapes may be made from Kynar® 740 resin which complies with FDA regulation 21 CFR 177.2510, USDA, USP XX Class VI, 3A sanitary standards and meets ASTM D3222 resin specifications.

TYPICAL APPLICATIONS

- Tanks & Process Equipment • Tank Linings • Pump & Valve Components • Pipe Flanges & Spacers • Components for Wet Process Stations • Food Trays for High Heat Applications

TYPICAL PROPERTIES of KYNAR® PVDF		
ASTM or UL test	Property	Kynar® PVDF
PHYSICAL		
D792	Density (lb/in ³) (g/cm ³)	0.064 1.77
D570	Water Absorption, 24 hrs (%)	0.03
MECHANICAL		
D638	Tensile Strength (psi)	6,300
D638	Tensile Modulus (psi)	290,000
D638	Tensile Elongation at Break (%)	50
D790	Flexural Strength (psi)	9,700
D790	Flexural Modulus (psi)	290,000
D695	Compressive Strength (psi)	9,000
D695	Compressive Modulus (psi)	-
D2240	Hardness, Shore	D75
D256	IZOD Notched Impact (ft-lb/in)	3.0

THERMAL		
D696	Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F)	6.6
D648	Heat Deflection Temp (°F / °C) at 264 psi	230 / 110
D3418	Melting Temp (°F / °C)	332 / 166
-	Max Operating Temp (°F / °C)	275 / 130
C177	Thermal Conductivity (BTU-in/ft ² -hr-°F) (x 10 ⁻⁴ cal/cm-sec-°C)	1.2 4.1
UL94	Flammability Rating	V-O
ELECTRICAL		
D149	Dielectric Strength (V/mil) short time, 1/8" thick	1700
D150	Dielectric Constant at 1 MHz	8.5
D150	Dissipation Factor at 1 MHz	0.05
D257	Volume Resistivity (ohm-cm) at 50% RH	1.5 x 10 ¹⁵

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.

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