

Fluorinar-H™ Kynar® PVDF Filament

3D printing is an exciting additive manufacturing method. However, available filament materials for engineers and chemists lack the corrosion resistance required for many industrial applications. With Fluorinar-H™ Kynar® PVDF filament reality has changed. Advantages of Fluorinar-H™ filament include:

- » Rapid part production in small quantities
- » Production of solid stock for CNC machining when tight part tolerances are required
- » Easy to print filament settings can be achieved on most consumer-grade printers
- » Wide melt window means no outgassing during part production
- » Final parts are corrosion resistant and can be exposed to a wide range of chemicals
- » Withstand UV and ionizing radiation without mechanical compromise

Fluorinar-H™ filament is made from 100% PVDF without processing aids, stabilizers, colorant or fillers.

Fluorinar-H™ Kynar® PVDF Print Settings

Print Quality	Filament Material	Color	Brim	Extrusion Temp (C)	Bed Temp (C)	Print Speed (mm/sec)	Layer Height (mm)
Standard	Fluorinar-H™	Natural	Yes	240 - 250	100	50	0.20
High	Fluorinar-H™	Natural	Yes	240 - 250	100	30	0.10

Fluorinar-H™ Kynar® PVDF Filament Properties

Part Number	Materials	Color	Filament Diameter (mm)	Diameter Tolerance (mm)	Filament Spool Weight (g)	USP Class VI
NPFH175N500	Kynar PVDF	Natural	1.75	+/- 0.05	500	Yes
NPFH285N500	Kynar PVDF	Natural	2.85	+/- 0.05	500	Yes

Fluorinar-H™ Material Properties

Physical Properties	Standards	Units	Results
Refractive Index	ASTM D542	-	1.42
Specific Gravity	ASTM D742	-	1.77 - 1.79
Water Absorption	ASTM D570	%	0.01 - 0.03
Mechanical Properties			
Flexural Strength at 5% Strain	ASTM D790	psi	8,500 - 11,000
Flexural Modulus	ASTM D790	psi	200,000 - 335,000
Tensile Yield Elongation	ASTM D638	%	5 - 10
Tensile Yield Strength	ASTM D638	psi	6,500 - 8,000
Tensile Break Elongation	ASTM D638	%	20 - 100
Tensile Break Strength	ASTM D638	psi	5,000 - 8,000
Tensile Modulus	ASTM D638	psi	200,000 - 335,000
Deflection Temperature	ASTM D648 at 66 psi	°F	221 - 239
Hardness	ASTM D2240	Shore D	76 - 80
Thermal Properties			
Melting Temperature	ASTM D3418	°F	329 - 342
Thermal Conductivity	ASTM D433	BTU-in/hr.ft ² F	1.18 - 1.32
Electrical Properties			
Dielectric Strength	ASTM D149	KV/mil	1.7
Volume Resistivity	ASTM D257	ohm-cm	2 x 10 ¹⁴
Flame and Smoke Properties			
Burning Rate	UL/Bulletin 94	-	V - O
Limiting Oxygen Index	ASTM D2868	% O ₂	44-75

Fluorinar-H™ Chemical Resistance

Chemical	Concentration	Maximum Temperature °F
Acetic Acid	50% in water	200
Acetone		Not Recommended
Brine		285
Bromine, liquid		150
Chlorine, liquid		200
Chromic Acid	Up to 40% in water	175
Hydrochloric Acid	Up to "concentrated"	285
Hydrofluoric Acid	41 - 100%	200
Nitric Acid	11 - 70% in water	125
Phosphoric Acid	Less than 85% in water	275
Sulfuric Acid	Up to 60% in water	250



Fluorinar-H™ Kynar® PVDF Filament is manufactured in the USA by Nile Polymers, Inc.
Contact us at (801) 203-3756 or sales@nilepolymers.com

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