



## Fluorinar™ 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™ Kynar® PVDF filament reality has changed. Advantages of Fluorinar™ 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 chemistries
- » Withstand UV and ionizing radiation without mechanical compromise

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

### Fluorinar™ Kynar® PVDF Print Settings

Print Quality	Filament Material	Color	Raft	Extrusion Temp (C)	Bed Temp (C)	Print Speed (mm/sec)	Layer Height (mm)
Standard	Fluorinar™	Natural	Yes	240 - 250	100	50	0.25
High	Fluorinar™	Natural	Yes	240 - 250	100	30	0.14

### Fluorinar™ Kynar® PVDF Filament Properties

Part Number	Materials	Color	Filament Diameter (mm)	Diameter Tolerance (mm)	Filament Spool Weight (g)	USP Class VI
NPF175N	Kynar PVDF	Natural	1.75	+/- 0.05	500	Yes
NPF285N	Kynar PVDF	Natural	2.85	+/- 0.05	500	Yes

## Kynar® PVDF Material Properties

Physical Properties	Standards	Units	Results
Refractive Index	ASTM D542	-	1.42
Specific Gravity	ASTM D742	-	1.77 - 1.80
Water Absorption	ASTM D570	%	0.03 - 0.05
Mechanical Properties			
Flexural Strength at 5% Strain	ASTM D790	psi	3,000 - 5,000
Flexural Modulus	ASTM D790	psi	150,000 - 180,000
Tensile Yield Elongation	ASTM D638	%	5 - 15
Tensile Yield Strength	ASTM D638	psi	4,500 - 6,000
Tensile Break Elongation	ASTM D638	%	30 - 200
Tensile Break Strength	ASTM D638	psi	4,000 - 7,000
Tensile Modulus	ASTM D638	psi	150,000 - 220,000
Deflection Temperature	ASTM D648 at 66 psi	°F	140 - 167
Hardness	ASTM D2240	Shore D	70 - 75
Thermal Properties			
Melting Temperature	ASTM D3418	°F	311 - 320
Thermal Conductivity	ASTM D433	BTU-in/hr.ft² F	1.0 - 1.25
Electrical Properties			
Dielectric Strength	ASTM D149	KV/mil	1.3 - 1.6
Volume Resistivity	ASTM D257	ohm-cm	2 x 10 <sup>14</sup>
Flame and Smoke Properties			
Burning Rate	UL/Bulletin 94	-	V - O
Limiting Oxygen Index	ASTM D2868	% O <sub>2</sub>	43/75

## Kynar® PVDF Chemical Resistance

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



Fluorinar™ Kynar® PVDF Filament is packaged in the USA and sold in Europe & Asia by 3dogg.com. ☎ 0031-622-395 762 or [info@3dogg.com](mailto:info@3dogg.com)

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