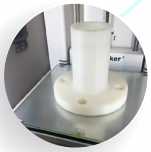
Fluorinar-C™ Kynar® PVDF Filament

PVDF is a semicrystalline polymer which experiences warping when it transitions from a melt to solid state resulting in dimensional distortion of the printed object and loss of adhesion to the build plate. Fluorinar-C™ Kynar® PVDF filament completely eliminates warping in all 3D prints. Now large parts can be printed without loss of print bed adhesion. The final print remains perfectly flat after completion and cooling. Before the existence of 3D printing, one-off parts were typically made by machining from solid stock. Fluorinar-C™ now gives you possibilities: you can either print the part or print solid stock and create the part by machining. Fluorinar-C™ filament is made from 100% PVDF without processing aids, stabilizers, colorants or fillers. Advantages of Fluorinar-C™ include the following:

- Large PVDF 3D Prints: print sizes are only limited by machine print volume
- Bottom print layer remains perfectly flat without using brims or rafts
- Excellent build plat adhesion: no loss of part dimensions due to warping
- No lifting around sharp corners on the printed part
- Meets ISO 10993 requirements
- Rapid prototype development
- Small quantity part production
- Cost-effective part manufacturing compared to machining from solid stock
- CNC machining of printed solid stock for tight tolerance requirements
- Optimal print settings can be achieved on all consumer-grade printers
- No off-gassing during printing due to PVDF melt stability
- Corrosion resistant prints
- No loss of mechanical strength after long-term UV exposure

Fluorinar-C™ Kynar® PVDF Filament Properties

Part Number	Material	Color	Filament Diameter (mm)	Diameter Tolerance (mm)	Filament Spool Weight (g)
NPFC175N1000	Kynar PVDF	White	1.75	+/- 0.05	1000
NPFC285N1000	Kynar PVDF	White	2.85	+/- 0.05	1000



Fluorinar-C™ Material Properties

Physical Properties	Standards	Units	Results
Refractive Index	ASTM D542	-	1.41
Specific Gravity	ASTM D742	-	1.78 - 1.80
Water Absorption	ASTM D570	%	0.03 - 0.06
Mechanical Properties			
Flexural Strength at 5% Strain	ASTM D790	psi	4,300 - 5,200
Flexural Modulus	ASTM D790	psi	101,000
Tensile Yield Elongation	ASTM D638	%	8
Tensile Yield Strength	ASTM D638	psi	3,700 - 4,300
Tensile Break Elongation	ASTM D638	%	50
Tensile Break Strength	ASTM D638	psi	2,900 - 4,000
Tensile Modulus	ASTM D638	psi	130,000
Deflection Temperature	ASTM D648 at 66 psi	°F	95 - 125
Thermal Properties			
Melting Temperature	ASTM D3418	°F	266 - 280
Thermal Conductivity	ASTM D433	BTU-in/hr.ft^2 F	1.0 - 1.25
Electrical Properties			
Dielectric Strength	ASTM D149	KV/mm	1.1 - 1.3
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	43

Kynar® PVDF Chemical Resistance

Chemical	Concentration	Maximum Temperature °F
Acetic Acid	50% in water	200
Acetone		Not Recommended
Brine		230
Bromine, liquid		125
Chlorine, liquid		175
Chromic Acid	Up to 40% in water	175
Hydrochloric Acid	Up to "concentrated"	230
Hydrofluoric Acid	41 - 100%	200
Nitric Acid	11 - 70% in water	150
Phosphoric Acid	Less than 85% in water	230
Sulfuric Acid	Up to 60% in water	230

Nile Polymers

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