

UNINAR® 1010

Polyvinylidene Fluoride

Nytec Plastics, Ltd.

Message:

UNINAR PVDF (POLYVINYLIDENE FLUORIDE) is a non-reinforced highly crystalline fluoropolymer that combines exceptional chemical resistance with superior strength and stability. When compared with traditional fluoropolymers like PTFE, UNINAR PVDF offers up to three times the typical strength and stiffness while maintaining unparalleled resistance to even the harshest chemicals—even at temperatures up to 300°F. These properties, along with its natural flame retardency (UL94, V-0) and ultrahigh purity have made it the material of choice for processing equipment components used in semiconductor manufacturing clean room environments. Because it also offers excellent toughness and electrical properties that remain stable over a wide range of both frequencies and temperatures, UNINAR PVDF is also often used in components used for power transmission. UNINAR PVDF is offered in two grades; UNINAR 740 (beige) and UNINAR 1010 (white). Both grades machine easily and are available from Nytec Plastics in a full range of heavy gauge rod, plate, and tubular bar sizes.

UNINAR PVDF ATTRIBUTES

- 300°F continuous use temperature
- Excellent balance of strength, toughness and abrasion resistance
- Resistant to virtually all chemicals and solvents
- Extremely low moisture absorption
- Low permeability to gases & liquids
- Excellent UV & nuclear radiation resistance
- Flame resistant -UL 94 V-0 rated
- Easily machined and fabricated

TYPICAL INDUSTRIES

- Chemical
- Pulp and paper processing
- Food processing equipment
- Electrical and electronics products
- Semiconductor manufacturing
- Petroleum processing

APPLICATIONS

- Pump components
- Manifolds and valves
- Fluid sensors
- Liquid chromatography components
- Analytical instruments
- Bearings and bushings

General Information	
Features	Flame Retardant
	Good Abrasion Resistance
	Good Chemical Resistance
	Good Electrical Properties
	Good Stability
	Good Toughness
	Good UV Resistance
	High Purity
	High Stiffness
	High Strength
	Highly Crystalline
	Low Gas Permeability
	Low Moisture Absorption

Machinable

Radiation (Gamma) Resistant

Solvent Resistant

Uses	Bearings
	Bushings
	Electrical/Electronic Applications
	Fluid Handling
	Food Service Applications
	Industrial Applications
	Pump Parts
	Semiconductor Molding Compounds
	Valves/Valve Parts

Appearance	White
Forms	Preformed Parts
	Rod

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.77	g/cm ³	ASTM D792
Water Absorption			ASTM D570
24 hr	< 0.040	%	
Saturation	0.080	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	110		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2400	MPa	ASTM D638
Tensile Strength (Yield)	54.1	MPa	ASTM D638
Tensile Elongation (Break)	80	%	ASTM D638
Flexural Modulus	2700	MPa	ASTM D790
Flexural Strength	74.5	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	110	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	113	°C	ASTM D648
Continuous Use Temperature	149	°C	UL 746
Peak Melting Temperature	178	°C	ASTM D3418
CLTE - Flow	1.3E-4	cm/cm/°C	ASTM D696
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	5.0E+14	ohms · cm	ASTM D257
Dielectric Strength ¹	10 to 11	kV/mm	ASTM D149

Flammability	Nominal Value	Unit	Test Method
Flame Rating (6.10 mm)	V-0		UL 94
NOTE			
1.	Method A (Short-Time)		

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