NYTEF PLASTICS

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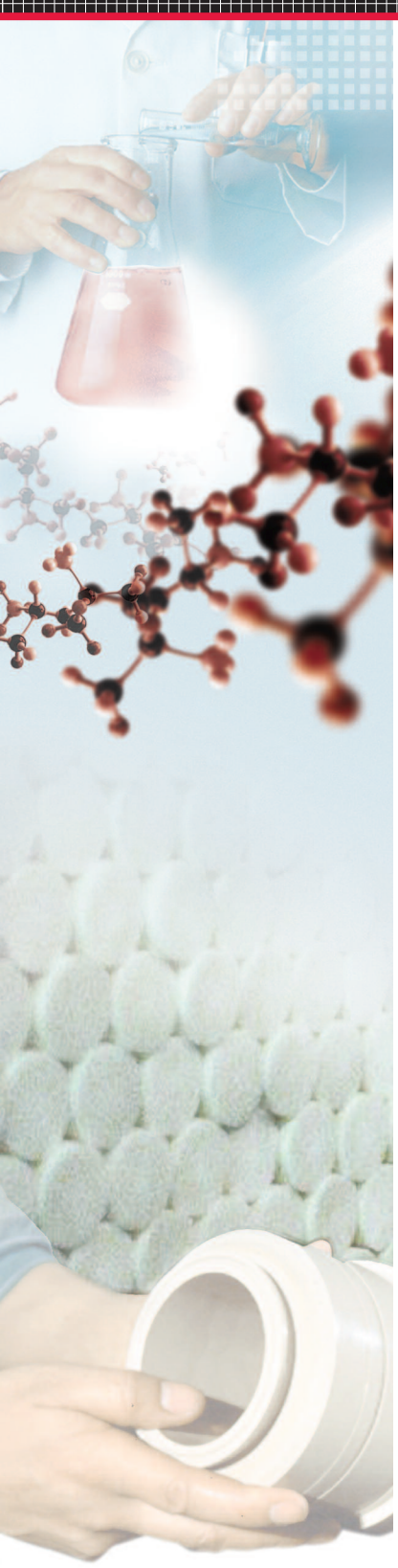

UNINAR® PVDF

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 Nytef 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

Nytef Plastics, Ltd. is dedicated to supplying our customers with the highest quality thermoplastic stock shapes for machining. We manufacture and stock a full line of thermoplastic materials in a wide variety of rod, plate and tubular bar sizes. In addition, we offer over 35 years of experience in the custom extrusion of application-specific and proprietary resins to meet even the most demanding performance requirements. Nytef Plastics offers full technical support for all products and is certified to ISO 9002 standards for the manufacture of extruded plastics stock shapes.

UNINAR® POLYVINYLIDENE FLUORIDE

Property	Test Method	Units	UNINAR 740 PVDF Unfilled	UNINAR 1010 PVDF Unfilled
Mechanical				
Specific Gravity	ASTM-D792	—	1.78	1.77
Tensile Strength	ASTM-D638	psi	6,000	7,850
Tensile Elongation	ASTM-D638	%	150	80
Tensile Modulus of Elasticity	ASTM-D638	psi	228,000	348,000
Flexural Strength	ASTM-D790	psi	7,250	10,800
Flexural Modulus of Elasticity	ASTM-D790	psi	240,000	392,000
Izod Notched Impact	ASTM-D256	ft.-lbs./in.	5.5	2.0
Rockwell Hardness	ASTM-D785	R scale	R84	R110
Thermal				
Coef. of Linear Thermal Expansion	ASTM-D696	in./in./°F	6.6×10^{-5}	7.1×10^{-5}
Continuous Use Temperature	UL 746	°F	300	300
Heat Deflection Temp. @ 264 psi	ASTM-D648	°F	240	235
Melting Point	ASTM-D3418	°F	340	352
Electrical				
Dielectric Strength – Short Term	ASTM-D149	volts/mil	260-280	260-280
Dielectric Constant @ 10^6 Hz	ASTM-D150		8.2	—
Volume Resistivity	ASTM-D257	ohm-cm	10^{16}	$5x10^{14}$
Miscellaneous				
Water Absorption/24 hrs.	ASTM-D570	% weight	0.01-0.03	<0.04
Water Absorption @ Saturation	ASTM-D570	% weight	0.03	0.08
Dynamic Coefficient of Friction	Nytef Std.		0.58	—
Flammability	UL 94		V-0	V-0
Color			Beige	White

NYTEF PLASTICS
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