NYTEF PLASTICS

Philadelphia • West Palm Beach • Chicago • Los Angeles • Fachbach, Germany

UNITAL® Acetal

UNITAL Acetal (polyoxy-methylene) offers design engineers a superior blend of strength, stiffness, lubricity, and dimensional stability. These properties, along with inherent machining ease, have made UNITAL one of the most widely used engineering grade thermoplastics. Nytef Plastics offers a broad array of UNITAL Acetal stock shapes to meet specific application configurations, and to maximize production efficiencies. These materials include both homopolymer (DELRIN®) and copolymer unfilled grades as well as PTFE-filled grades for enhanced wear resistance.

UNITAL ACETAL ATTRIBUTES

- 185°F continuous use temperature
- High strength and stiffness
- Excellent toughness
- Superior wear resistance
- Very low moisture absorption
- Easily machined and fabricated

UNFILLED PRODUCTS

UNITAL H

- Higher strength and stiffness
- Superior toughness

UNITAL C

- Improved chemical resistance
- Superior dimensional stability

ENHANCED WEAR PRODUCTS

- Very low Coefficient of Friction
- Improved wear life
- Virtually eliminates "slip-stick" behavior

UNITAL Lf-13

- 13% PTFE powder filled acetal

DELRIN AF Blend

- 13% PTFE fiber filled homopolymer acetal

INDUSTRIES

- Food processing
- Material handling equipment
- Fluid handling
- Electronics manufacturing
- Automotive

APPLICATIONS

- Pistons
- Valves
- Manifolds
- Food product forming dies
- Timing screws
- Scraper blades
- Wear strips
- Pump components
- Gears
- Bushings and bearings
- Electrical components

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.

UNITAL® ACETAL

Property	Test Method	Units	UNITAL H	UNITAL C	UNITAL Lf-13	DELRIN AF BLEND
			Unfilled Homopolymer	Unfilled Copolymer	13% PTFE Powder	13% PTFE Fiber
Mechanical						
Specific Gravity	ASTM-D792	—	1.42	1.41	1.48	1.50
Tensile Strength	ASTM-D638	psi	9,600-11,000	9,000-10,200	8,000-8,500	7,600-8,000
Tensile Elongation	ASTM-D638	%	30-50	30-60	15-30	15-30
Tensile Modulus of Elasticity	ASTM-D638	psi	450,000	400,000	600,000	450,000
Flexural Strength	ASTM-D790	psi	14,300	12,000	13,500	12,500
Flexural Modulus of Elasticity	ASTM-D790	psi	470,000	366,000	410,000	450,000
Compressive Strength	ASTM-D695	psi	16,000	15,000	15,500	16,000
Izod Notched Impact	ASTM-D256	ft.-lbs./in.	1.2	1.0	0.8	0.9
Rockwell Hardness	ASTM-D785	M or R	M94	M90	M89	M89
Thermal						
Coef. of Linear Thermal Expansion	ASTM-D696	in./in./°F	6.8×10^{-5}	5.4×10^{-5}	5.2×10^{-5}	5.0×10^{-5}
Max. Continuous Use Temp.	Nytef Std.	°F	185	185	185	185
Heat Deflection Temp. @ 264 psi	ASTM-D648	°F	257	220	235	260
Melting Point	ASTM-D3418	°F	347	335	347	347
Electrical						
Dielectric Strength-Short Term	ASTM-D149	volts/mil	500	500	400	400
Dielectric Constant @ 60 Hz	ASTM-D150		3.7	3.8	3.1	3.1
Dielectric Constant @ 10^6 Hz	ASTM-D150		3.7	3.8	3.1	3.1
Dissipation Factor @ 60 Hz	ASTM-D150		0.005	0.003	0.009	0.009
Volume Resistivity	ASTM-D257	ohm-cm	10^{15}	10^{15}	10^{15}	10^{15}
Miscellaneous						
Water Absorption/24 hrs.	ASTM-D570	% weight	0.25	0.25	0.23	0.20
Water Absorption @ Saturation	ASTM-D570	% weight	0.90	0.8	0.8	0.72
Flammability	UL 94		HB	HB	HB	HB
Dynamic Coefficient of Friction	Nytef Std.		0.20	0.21	0.16	0.17
Agency Compliance						
FDA			Yes	Yes	Yes	No
USDA			Yes	Yes	Yes	No
NSF			Yes	Yes	No	Yes

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