



# NYTEF PLASTICS

New York • Philadelphia • Atlanta • Chicago • Los Angeles • Fachbach, Germany

## UNICAR® Polycarbonate

UNICAR Polycarbonate is a transparent thermoplastic that exhibits extraordinary impact resistance and excellent electrical properties. In addition, its low moisture absorption rate and good chemical resistance make it an extremely versatile engineering material and allows for its use in a multitude of industrial applications. Unfilled UNICAR Polycarbonate is a mechanical grade material with light transmittance of approximately 88%.

For applications requiring additional stiffness, glass fiber filled UNICAR Rg is available with fiber filler levels ranging from 10% to 40%. Nytef Plastics stocks UNICAR and UNICAR Rg Polycarbonate products in a full range of heavy gauge rod, plate and tubular bar sizes.

### PRODUCT ATTRIBUTES

- 265°F continuous use temperature
- Transparent
- Excellent toughness
- Low moisture absorption
- Superior electrical properties
- Excellent UV resistance
- Flame resistant - Rated UL V-0
- Easily machined and fabricated
- Glass fiber filled grades for improved strength and stiffness

### INDUSTRIES

- Aircraft and aerospace
- Fluid handling
- Electrical and electronics products
- Automotive
- Business machines

### APPLICATIONS

- Electrical component housings
- Electrical insulators
- Aircraft instrumentation
- Sight glasses
- Manifolds



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 30 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.

## UNICAR® POLYCARBONATE

Property	Test Method	Units	UNICAR	UNICAR Rg-20
			Unfilled Polycarbonate	20% Glass Fiber Reinforced PC
<b>Mechanical</b>				
Specific Gravity	ASTM-D792	---	1.20	1.35
Tensile Strength	ASTM-D638	psi	9,500	16,000
Tensile Elongation	ASTM-D638	%	110	5
Tensile Modulus of Elasticity	ASTM-D638	psi	330,000	860,000
Flexural Strength	ASTM-D790	psi	13,500	19,000
Flexural Modulus of Elasticity	ASTM-D790	psi	340,000	800,000
Compressive Strength	ASTM-D695	psi	12,500	16,000
Izod Impact (notched)	ASTM-D256	ft.-lbs./in.	17.0	2.0
Rockwell Hardness	ASTM-D785	M/R scale	M70/R118	M91/R122
<b>Thermal</b>				
Coef. of Linear Thermal Expansion	ASTM-D696	in./in./°F	$3.8 \times 10^{-5}$	$1.49 \times 10^{-5}$
Continuous Use Temp.	UL 746	°F	265	265
Heat Deflection Temp. @ 264 psi	ASTM-D648	°F	270	295
<b>Electrical</b>				
Dielectric Strength-Short Term	ASTM-D149	volts/mil	380	490
Dielectric Constant @ 60 Hz	ASTM-D150		3.17	3.17
Dielectric Constant @ 10 <sup>6</sup> Hz	ASTM-D150		2.96	3.13
Dissipation Factor @ 60 Hz	ASTM-D150		0.0009	0.0009
Volume Resistivity	ASTM-D257	ohm-cm	$>10^{17}$	$>10^{17}$
<b>Miscellaneous</b>				
Water Absorption/24 hrs.	ASTM-D570	% weight	0.15	.016
Water Absorption @ Saturation	ASTM-D570	% weight	0.35	0.29
Flammability	UL-94		V-0 (0.236")	V-0 (0.125")
Color	—	—	Transparent	Black

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