

UNICAR® Rg-20

Polycarbonate

Nytec Plastics, Ltd.

Message:

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%. Nytec 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
- 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

General Information	
Filler / Reinforcement	Glass Fiber,20% Filler by Weight
Features	Good Chemical Resistance
	Good Electrical Properties
	Good Impact Resistance
	Good Stiffness
	Good Strength
	Good Toughness
	Good UV Resistance
	High Clarity
	Low Moisture Absorption
Uses	Machinable
	Aerospace Applications
	Aircraft Applications
	Aircraft Interiors
	Automotive Applications

Business Equipment
Electrical Housing
Electrical Parts
Electrical/Electronic Applications
Eyeglasses

Appearance	Black
Forms	Preformed Parts Rod

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.35	g/cm ³	ASTM D792
Water Absorption			ASTM D570
24 hr	0.016	%	
Saturation	0.29	%	

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	91		
R-Scale	122		

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	5930	MPa	ASTM D638
Tensile Strength	110	MPa	ASTM D638
Tensile Elongation (Break)	5.0	%	ASTM D638
Flexural Modulus	5520	MPa	ASTM D790
Flexural Strength	131	MPa	ASTM D790
Compressive Strength	110	MPa	ASTM D695

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)	146	°C	ASTM D648
Continuous Use Temperature	129	°C	UL 746
CLTE - Flow	2.7E-5	cm/cm/°C	ASTM D696

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 1.0E+17	ohms · cm	ASTM D257
Dielectric Strength ¹	19	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
1 MHz	3.13		
60 MHz	3.17		
Dissipation Factor (60 Hz)	9.0E-4		ASTM D150

Flammability	Nominal Value	Unit	Test Method
Flame Rating	HB		UL 94

NOTE

1. Method A (Short-Time)

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