



# Gordon Composites™ GC-70-UL

## Advanced Composites

### Key Characteristics

Product Description			
A continuous unidirectional "E" fiberglass/epoxy laminate that has high strength and stiffness along the longitudinal (0) axis. GC-70-UL is manufactured with a proprietary pulforming process in which all glass fibers are pretensioned and aligned during the impregnation and curing process.			
General			
Material Status	• Commercial: Active		
Regional Availability	• North America		
Filler / Reinforcement	• Glass Fiber, 70% Filler by Weight		
Uses	• Industrial Applications	• Prosthetics	• Structural Parts
	• Marine Applications	• Sporting Goods	
	• Metal Replacement	• Springs	
Appearance	• Black	• Brown	• Red
	• Blue	• Colorless	• White
Forms	• Sheet <sup>1</sup>	• Unidirectional <sup>2</sup>	
Processing Method	• Machining		

### Technical Properties <sup>3</sup>

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	1.88 g/cm <sup>3</sup>	1.88 g/cm <sup>3</sup>	ASTM D1505
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus			ASTM D3039
-- <sup>4</sup>	6.00E+6 psi	41400 MPa	
-- <sup>5</sup>	1.50E+6 psi	10300 MPa	
Tensile Strength			ASTM D3039
-- <sup>4</sup>	152000 psi	1050 MPa	
-- <sup>5</sup>	6800 psi	46.9 MPa	
Tensile Strain <sup>4</sup> (Break)	2.5 %	2.5 %	ASTM D3039
Flexural Modulus	5.80E+6 psi	40000 MPa	ASTM D790
Flexural Strength <sup>6</sup>	208000 psi	1430 MPa	ASTM D790
Compressive Modulus			ASTM D3410
-- <sup>5</sup>	1.80E+6 psi	12400 MPa	
-- <sup>4</sup>	6.00E+6 psi	41400 MPa	
Compressive Strength			ASTM D3410
-- <sup>4</sup>	111000 psi	765 MPa	
-- <sup>5</sup>	21200 psi	146 MPa	
Shear Modulus			ASTM D5379
-- <sup>7</sup>	490000 psi	3380 MPa	
-- <sup>8</sup>	650000 psi	4480 MPa	
Shear Strength			ASTM D5397
-- <sup>8</sup>	7400 psi	51.0 MPa	
-- <sup>7</sup>	4900 psi	33.8 MPa	ASTM D5379
Poisson's Ratio <sup>9</sup>	0.29	0.29	ASTM D3410

Copyright © 2017 PolyOne Corporation. PolyOne makes no representations, guarantees, or warranties of any kind with respect to the Information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Some of the Information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. Values reported as "typical" or stated without a range do not state minimum or maximum properties; consult your sales representative for property ranges and min/max specifications. Processing conditions can cause material properties to shift from the values stated in the Information. PolyOne makes no warranties or guarantees respecting suitability of either PolyOne's products or the Information for your process or end-use application. You have the responsibility to conduct full-scale end-product performance testing to determine suitability in your application, and you assume all risk and liability arising from your use of the Information and/or use or handling of any product. POLYONE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, either with respect to the Information or products reflected by the Information. This data sheet shall NOT operate as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner.

Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Glass Transition Temperature	250 °F	121 °C	ASTM D3418

**Notes**

<sup>1</sup> Width: .1.50" to 18.00"  
 Thickness: .018" to .080"  
 Length: 6" to 120" strips

<sup>2</sup> Also available in roll form with lengths up to 250 ft.

<sup>3</sup> Typical values are not to be construed as specifications.

<sup>4</sup> 0 degree orientation

<sup>5</sup> 90 degree orientation

<sup>6</sup> Strength Values developed from ASTM D790 are dependent on thickness. As thickness increased flex strength decreased. The test data above is based on a test thickness of .060"

<sup>7</sup> Inter-laminar, 2,3 direction

<sup>8</sup> In-plane, 1,2 direction

<sup>9</sup> nu12 (0/90), valid both tensile and compression

**CONTACT INFORMATION****Americas**

United States - Avon Lake  
 +1 440 930 1000

United States - McHenry  
 +1 815 385 8500

**Asia**

China - Guangzhou  
 +86 20 8732 7260

China - Shenzhen  
 +86 755 2969 2888

China - Suzhou  
 +86 512 6823 24 38

China - Suzhou  
 +86 512 6265 2600

Hong Kong -  
 +852 2690 5332

Taiwan - Yonghe City,  
 +886 9396 99740, +886 2929 1849

**Europe**

Germany - Gaggenau  
 +49 7225 6802 0

Spain - Barbastro (Huesca)  
 +34 974 310 314



*Beyond Polymers.*

*Better Business Solutions. SM*

www.polyone.com

**PolyOne Americas**

33587 Walker Road  
 Avon Lake, Ohio 44012  
 United States  
 +1 440 930 1000  
 +1 866 POLYONE

**PolyOne Asia**

No. 88 Guoshoujing Road  
 Z.J Hi-tech Park, Pudong  
 Shanghai, 201203, China  
 +86 21 5080 1188

**PolyOne Europe**

6 Giällewee  
 +352 269 050 35

Copyright ©, 2017 PolyOne Corporation. PolyOne makes no representations, guarantees, or warranties of any kind with respect to the Information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Some of the Information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. Values reported as "typical" or stated without a range do not state minimum or maximum properties; consult your sales representative for property ranges and min/max specifications. Processing conditions can cause material properties to shift from the values stated in the Information. PolyOne makes no warranties or guarantees respecting suitability of either PolyOne's products or the Information for your process or end-use application. You have the responsibility to conduct full-scale end-product performance testing to determine suitability in your application, and you assume all risk and liability arising from your use of the Information and/or use or handling of any product. POLYONE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, either with respect to the Information or products reflected by the Information. This data sheet shall NOT operate as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner.