

Toyobo Zylon® HM Fiber/Epoxy Matrix Unidirectional Composite

Category : Polymer , Thermoset , Carbon Fiber/Thermoset Composite , Epoxy

Material Notes:

Poly(p-phenylene-2,6-benzobisoxazole) (PBO) is a rigid-rod isotropic crystal polymer. Zylon is a new high performance fiber developed by TOYOBO using the latest material science and state of the art fiber technology. Zylon has superior tensile strength and modulus compared to p-Aramid fibers. It also has outstanding high flame resistance and thermal stability. Zylon shows excellent performance in such properties as creep, chemical resistance, cut/abrasion resistance and high temperature abrasion resistance, that far exceeds p-Aramid fibers. Zylon's moisture regain is low (0.6%) and it is dimensionally stable against humidity. Zylon is quite flexible and has a very soft hand, in spite of its extremely high mechanical properties. It can be processed into various product forms, such as continuous filament, staple fiber, spun yarn, woven and knitted fabrics, chopped fiber and pulp. Data provided by Toyobo Co., Ltd.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Toyobo-Zylon-HM-FiberEpoxy-Matrix-Unidirectional-Composite.php

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	2700 MPa	392000 psi	Vf=59%
Tensile Modulus	140 GPa	20300 ksi	Vf=59%
Flexural Yield Strength	550 MPa	79800 psi	Vf=58%
Flexural Modulus	70.0 GPa	10200 ksi	Vf=58%
Poissons Ratio	0.30	0.30	Vf=59%
Shear Strength	70.0 MPa	10200 psi	Interlaminar shear strength; Vf=54%; L/d = 4.
Impact Test	18.0 J	13.3 ft-lb	Absorbed energy with 3.5 kN maximum load. 12.7 mm hemisphere insert; 38.1 mm circle support; 5.51 kg weight; 4.47 m/s impact velocity.

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