

DuPont™ Kevlar® 29 Aramid Fiber

Category : Other Engineering Material , Composite Fibers , Polymer , Thermoset , Aramid

Material Notes:

1500 Denier; 1000 Filaments. Kevlar® 29 yarns are used in ballistic applications, ropes and cables, protective apparel such as cut-resistant gloves, in life protection uses such as helmets, vehicular armoring and plates, and as rubber reinforcement in tires and automotive hoses.

General KEVLAR Information: DuPont Kevlar® poly-para-phenylene terephthalamide (aramid) has a unique combination of high strength, high modulus, toughness, and thermal stability. It was developed for demanding industrial and advanced-technology applications. It is chemically stable under a wide variety of exposure conditions; however, certain strong aqueous acids, bases, and sodium hypochlorite can cause degradation, particularly over long periods of time and at elevated temperatures. Information provided by DuPont.

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Kevlar-29-Aramid-Fiber.php

Physical Properties	Metric	English	Comments
Density	1.44 g/cc	0.0520 lb/in ³	
Water Absorption	7.0 %	7.0 %	As shipped; Typical moisture levels on yarn as shipped; they reflect values reached at normal, moderate temperature and humidity levels following fiber production, which is a wet process.
Moisture Absorption at Equilibrium	4.5 %	4.5 %	Equilibrium from Bone-Dry Yarn; Equilibrium values are determined by bone drying the fiber and condition at 75°F (24°C), 55% RH.

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	2920 MPa	424000 psi	Breaking Tenacity
	3620 MPa	525000 psi	Epoxy-impregnated strands, ASTM D2343
Elongation at Break	3.6 %	3.6 %	
Tensile Modulus	70.3 GPa	10200 ksi	
Tenacity	2.03 N/tex	23.0 g/denier	

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.42 J/g-°C	0.339 BTU/lb-°F	
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Thermal Conductivity	0.0400 W/m-K	0.278 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	149 - 177 °C	300 - 351 °F	For long-term use

Shrinkage Thermal Properties	≤ 0.100 % Metric	≤ 0.100 % English	In water at 212°F (100°C) and in air at 391°F (200°C)
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Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com
Email : sales@lookpolymers.com
Tel : +86 021-51131842
Mobile : +86 13061808058
Skype : lookpolymers
Address : United North Road 215,Fengxian District, Shanghai City,China