



BEIJING QUANTUMETA AMT CO., LTD
北京量子天地新材料科技有限公司

ADD: Building 1# Chengying center, Wangjing, Chaoyang, Beijing, PR.China, 100102
地址: 北京市朝阳区望京来广营西路诚盈中心1号楼

Tel: 010-85926517

Email: sales@quantumeta.com

ZHEJIANG QUANTUMETA AMT CO., LTD
浙江全米特新材料科技有限公司

ADD: No.888, Zikai West Road, Shimen, Tongxiang, Zhejiang Province, PR.China, 314512
地址: 浙江省桐乡市石门工业区子恺西路888号

Tel: 0573-89386328

Email: sales@quantumeta.com

www.quantumeta.com

QuantaPreg™

UHMWPE / CARBON HYBRID FABRIC PREPREG
超高分子量聚乙烯纤维 / 碳纤维混编织物预浸料

UHMWPE FIBER PREPREG
超高分子量聚乙烯纤维单向预浸料

www.quantumeta.com



ABOUT QUANTUMETA 公司简介

QUANTUMETA is an innovative solution provider of high performance composites. Our goal is to meet customer's ever-increasing demand on lighter-and-stronger composite materials in every industry, product and application by our unique knowhow of advanced materials and application solutions.

北京量子天地新材料科技有限公司（公司简称“量子天地”）成立于2015年，通过创新的高性能复合材料解决方案立足于先进复合材料领域。公司将生产基地和研发中心建设于浙江省桐乡市，成立了浙江全米特新材料科技有限公司，设计引进最先进的生产实验设备，工艺水平领先，研发实力雄厚。公司的研发人员和技术服务团队广泛贴近市场，倾听客户需求，用定制化的解决方案满足客户的产品性能需求，帮助客户挖掘和提升产品的商业价值。

TECHNOLOGY 技术专长

QUANTUMETA has technical expertise of high performance fabric design and application solutions. Its product portfolio covers UHMWPE fiber, high performance fabrics, prepregs, and composite parts. With unique value proposition of "lighter-and-stronger composites", QUANTUMETA serves a wide range of markets and applications like marine engineering, lightweight vehicles, inflatable structures, sports equipment, new energy and etc.

QUANTUMETA's product applications compose of two major categories, i.e. rigid composite and flexible composite. Its high performance fabrics used as reinforcement can effectively reduce weight of composites, improving strength and impact resistance. Its high performance membrane, QuanCles™, is the world's strongest membrane with extremely high strength to weight ratio and excellent properties, bringing flexible composite fields many more possibilities.

量子天地拥有高性能织物设计专长和应用技术专长，通过创新的材料技术为市场提供具有轻质、高强、高性能等优异性能的复合材料产品和应用解决方案。公司产品涵盖高性能纤维、高性能增强织物、预浸料、高性能膜材和复合材料制件，广泛服务于海洋工程、特种建筑、轻量化交通、体育休闲和新能源等应用市场。

量子天地的产品主要分为两大应用方向，硬质复合材料和柔性复合材料。在硬质复合材领域，量子天地的高性能增强解决方案可以显著降低复合材料的重量，提升复合材料的强度和耐冲击韧性；在柔性复合材料领域，海格隆™柔性复合膜材性能突破了传统膜材的最高水平，其超高的比强度和优异的性能为柔性复合材料领域带来了更多的可能。

QuantaPreg™

UHMWPE / Carbon Hybrid Fabric Prepreg
超高分子量聚乙烯纤维 / 碳纤维混编织物预浸料

PRODUCT DESCRIPTION / 产品介绍

QuantaPreg™, developed by QUANTUMETA, is a high performance prepreg made of UHMWPE/Carbon hybrid fabrics and special matrix resin. By combination of the properties of ultra strong, super light, ductility from UHMWPE fiber and stiffness from Carbon fiber, QuantaPreg™ demonstrates lighter weight and higher impact resistance compared with traditional carbon fiber prepreg. It is designated for manufacturing composites used in sports, new energy vehicles, high speed boats, UAV, paddles and etc.

QuantaPreg™是量子天地开发的一款混编织物预浸料，采用超高分子量聚乙烯纤维和碳纤维混编织物与特种树脂结合而成。它充分结合了超高分子量聚乙烯纤维超强、超轻、耐冲击的特性和碳纤维的刚性，制成的复合材料制件较纯碳纤维制件相比重量更轻，耐冲击韧性更强。QuantaPreg™主要应用于生产对轻量化和耐冲击安全性要求较高的运动器材、轻量化汽车、无人机、高速船艇、船桨等复合材料产品。

PROPERTIES / 性能特点

Lighter

Low density of UHMWPE fibers makes QuantaPreg™ achieve lighter weight.

更轻

超高分子量聚乙烯纤维的密度是碳纤维的1/2左右，由二者混编而成的织物预浸料重量较碳纤维更轻，能够满足进一步产品轻量化的应用需求。

Higher Impact Resistance

The high energy absorption capability of UHMWPE fibers could significantly improve the impact resistance of the composites. The tested sample would still keep structural integrity even if the matrix resin of composite fails after impact.

耐冲击性更强

碳纤维为脆性纤维，耐冲击韧性差，给碳纤维复合材料的安全性带来了隐患。超高分子量聚乙烯纤维有着优异的能量吸收性能，表现出良好的耐冲击性。因此，将二者混编使用可以大幅增强复合材料整体的耐冲击性能。

[PECT-S190] TECHNICAL DATA SHEET / 技术参数表

| Material Type 材料构成 | Woven Pattern 编织方式 | Fabric Areal-weight 织物面密度 | Resin Content 树脂含量 |
|---|-----------------------|------------------------------|-----------------------|
| UHMWPE Fiber / 超高分子量聚乙烯纤维 Carbon Fiber / 碳纤维 Epoxy Resin / 环氧树脂 | Twill-weave 斜纹 | 190 ± 10 g/m ² | 42 ± 3% |

QuantaPreg™ can be tailor-made according to customer's requirement
可根据用户需求定制方案

APPLICATIONS / 应用领域

Sports Equipment / New Energy Vehicle / High-speed Railway/ Drone/ High-speed Boat/ Paddle
运动器材、新能源汽车、高速列车、无人机、高速艇、船桨



QuantaPreg™

UHMWPE Fiber Prepreg
超高分子量聚乙烯纤维单向预浸料

PRODUCT DESCRIPTION / 产品介绍

UHMWPE fiber prepreg is a high performance prepreg made of unidirectional UHMWPE fiber and special matrix resin, and it demonstrates properties of lightweight, high transmissivity and high resistance.

UHMWPE fiber has density of 0.97g/cm³, 2/3 of aramid fiber and 1/2 of carbon fiber, the highest strength-to-weight ratio among high performance fibers. Meanwhile, UHMWPE fiber features low dielectric constant and high transmissivity; therefore, radomes made of UHMWPE prepreg can achieve less signal loss and lightweight at the same time. UHMWPE also has excellent properties of low temperature resistance, corrosion resistance, UV resistance, endows its products a wide range of using conditions.

超高分子量聚乙烯纤维预浸料是由单向超高分子量聚乙烯纤维结合特种树脂而制成的一款具有轻质、高性能、高透波率等优异性能的预浸料。

超高分子量聚乙烯纤维的密度为0.97g/cm³，是芳纶纤维的2/3，碳纤维的1/2，其比拉伸强度是高性能纤维中最高的。同时，超高分子量聚乙烯纤维有着超低的介电常数和超高的透波率，使用超高分子量聚乙烯纤维预浸料制成的雷达罩不仅重量轻，透波率也远高于其他材料产品。此外，超高分子量聚乙烯纤维耐寒性突出、耐腐蚀、耐紫外、耐老化性能优异，使其产品可广泛适用于多种环境条件。

PERFORMANCE FEATURES / 性能特点

- Light weight
- High transmissivity
- 重量轻
- 高透波率
- Low dielectric constant
- High resistance
- 低介电常数
- 高抗性能

[PEUL-S56] TECHNICAL DATA SHEET / 技术参数表

| Material Type 材料构成 | Woven Pattern 编织方式 | Fabric Areal-weight 织物面密度 | Resin Content 树脂含量 |
|---|-----------------------|------------------------------|-----------------------|
| UHMWPE Fiber / 超高分子量聚乙烯纤维 Epoxy Resin / 环氧树脂 | Unidirectional 单向 | 56 ± 3 g/m ² | 42 ± 3% |

APPLICATIONS / 应用领域

Radome / 雷达罩

