

DYNEEMA[®] CARBON: BRINGING LIGHTWEIGHT PERFORMANCE & IMPROVED SAFETY TO AUTOMOTIVE & MOTOR SPORTS APPLICATIONS

DSM showcases its innovative materials solutions for the automotive industry at the IAA 2017 international auto show in Frankfurt, Germany, from 14-24 September. Dyneema[®] Carbon hybrid composites will be a centerpiece of the company's exhibit in the New Mobility World Hall (3.1), where it will be part of the "Holland High-Tech Pavilion."

Combining the ultrahigh-molecular-weight polyethylene (UHMwPE) fiber branded as Dyneema[®] with carbon fiber yields, when mixed with a thermoset resin a hybrid composite called Dyneema[®] Carbon. The resulting material represents a leap in the evolution of carbon. It significantly improves the performance of pure carbon composites in terms of impact resistance, ductility, vibrational dampening and weight.

The popularity of pure carbon is easy to explain: *"It's strong, stiff, lightweight and easy to mold. But it's not so good at handling impacts,"* notes Koen Janssen, VP Innovation DSM Dyneema *"Carbon also splinters when it breaks, which can cause injuries. By marrying carbon with Dyneema[®] fiber, impact energy absorption can be increased by up to 100% while removing the risk of splintering or shattering".*

The lightweight performance power of [Dyneema[®] Carbon hybrid composites](#) will be on full display at the IAA in Frankfurt, including applications that demonstrate how the material improves the performance of automotive products that currently rely on pure carbon composites. Several manufacturers are currently testing Dyneema[®] carbon composite, primarily for racing and supersports cars. First commercial introduction can be expected in 2018.

The material is already being used in the OMP-brand racing steering wheel. This impact-resistant steering wheel maintains its structural integrity in crashes, thereby preventing the formation of sharp edges, and enhancing driver safety.

About DSM Dyneema

DSM Dyneema is the inventor and manufacturer of Ultra High Molecular Weight PolyEthylene (UHMWPE) fiber branded as Dyneema[®], the world's strongest fiber[™]. Dyneema[®] offers maximum strength combined with minimum weight. It is up to 15 times stronger than quality steel and up to 40% stronger than aramid fibers, both on weight for weight basis. Dyneema[®] fiber floats on water and is extremely durable and resistant to moisture, UV light and chemicals. The applications are therefore more or less unlimited. Dyneema[®] is an important component in ropes, cables and nets in the fishing, shipping and offshore industries. Dyneema[®] is also used in safety gloves for the metalworking industry and in fine yarns for applications in the medical sector. In addition, Dyneema[®] is also used in bullet resistant armor and clothing for police and military personnel. Furthermore the new generation Dyneema[®] Fabrics offer next level innovations in denim, apparel, footwear, sports equipment and lightweight outdoor products and accessories.

UHMWPE products from DSM Dyneema are produced in Heerlen (The Netherlands), Greenville, North Carolina (U.S.A.) and Mesa, Arizona (U.S.A). DSM Dyneema is also a partner in a high modulus polyethylene (HMPE) manufacturing joint venture in Japan. Further information on DSM Dyneema is available at www.dyneema.com.

DSM - Bright Science. Brighter Living.™

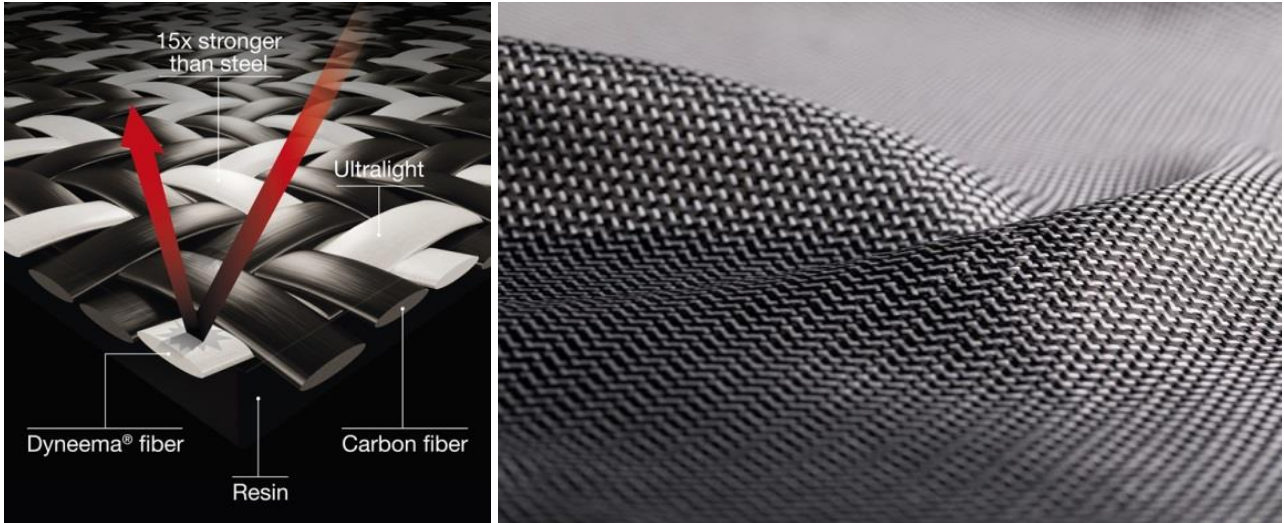
Royal DSM is a global science-based company active in health, nutrition and materials. By connecting its unique competences in life sciences and materials sciences DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders simultaneously. DSM delivers innovative solutions that nourish, protect and improve performance in global markets such as food and dietary supplements, personal care, feed, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials. DSM and its associated companies deliver annual net sales of about €10 billion with approximately 25,000 employees. The company is listed on Euronext Amsterdam. More information can be found at www.dsm.com.

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Dyneema[®] Carbon: a perfect marriage for lightweight performance.
(Photos DSM Dyneema, DYNPR347)