

TEIJIN

Human Chemistry, Human Solutions



Providing strength and safety

Marine developments

With the trend toward larger, more luxurious motorboats and sailing yachts as well as an increase in fast cruising and racing, the demand for greater strength and safety in the marine industry has grown in recent years.

With increasing dimensions on one hand and a desire for higher speeds on the other hand, boat designers and builders are aiming to reduce the weight of yachts. Furthermore, they are looking for ways to minimize the impact of collisions and increase comfort by reducing vibration and noise. This is where our high-performance fiber Twaron comes in, providing structural integrity while dampening vibrations and noise. At Teijin Aramid we are continually supporting our customers in creating both new and optimized composite structures.

Key benefits when using our aramid

- Excellent damage tolerance
- Excellent performance/weight ratio
- Good vibration and sound-dampening properties
- High modulus and tensile strength of the composite structure
- High dimensional stability

Twaron® | Technora®

The power of Aramid

Twaron: a sea-worthy fiber

Our high-performance aramid fiber Twaron is widely used in composites, alongside carbon and glass fiber. Boat builders and designers use reinforcements based on one or more of these fibers. Whereas fiberglass is a cost-effective solution, carbon and aramid are particularly valuable in high-performance applications, especially where weight reduction is an important factor. In addition, applying Twaron-based reinforcement in hulls is a prerequisite for maintaining the structural integrity of hulls in case of collision. It also reduces vibrations and dampens the sound of the waves.

As more and more vessels are cruising on the open seas and oceans, safety has become a crucial issue. Twaron provides the solution.

Outstanding qualities

Twaron is twice as strong as glass fiber and half as heavy, with substantially higher modulus. It also has good compatibility with vinyl esters, epoxies and isophthalic polyester resins.

Twaron fibers are used in different types of reinforcements, including unidirectional, multi-axial and woven fabrics.

Other products

Twaron is not only used in state-of-the-art racing and motor boats, it is also used to build a wide range of other boats, including canoes, kayaks, catamarans, fast rowing boats, fishing boats and ferries.



High-tech sails

In the last decade there's been a revolution in high-tech sail-making. Today's high-performance sails need to be durable, light, strong and stretch-resistant, even under the most extreme conditions. The strength, stiffness and dimensional stability of Twaron-reinforced laminated sails help make it possible for racing yachts to compete at the highest level.

At the request of customers in the sailing and sports industries, Teijin Aramid has developed an all-black high-modulus Twaron. This is in fact the first high-modulus black aramid yarn on the market. With Twaron Black, it is possible to combine the unique characteristics of aramid fiber with a look that stands out.

Our other high-performance para-aramid fiber Technora Black has proven itself in sails because of its exceptional strength and durability. Technora Black is also used to reinforce the rigging of high-performance sails.

You will find our aramids in the sails of most of the yachts competing in prestigious races such as the America's Cup and the Volvo Ocean Race.

For more information, please e-mail us at composites@teijinaramid.com or visit www.teijinaramid.com

We do not accept any liability for the results of the use of these products. The technical data in this leaflet reflects our best knowledge at the time of publication. The content of this leaflet is subject to change, depending on new developments and findings, and a similar reservation applies to the properties described in it.

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