

TEIJIN

Human Chemistry, Human Solutions



**Creating a
safer world**

Twaron[®]

The power of Aramid

A world of safety

The growing threat of violence has led to an increasing demand for ballistic protection. At Teijin Aramid we are dedicated to providing this protection with our high-performance para-aramid fiber Twaron. With excellent energy absorption properties, tenacity and impact resistance, Twaron offers effective and comfortable ballistic solutions with an outstanding cost-performance ratio. In the more than 20 years that Twaron has been available on the market, it has helped to save thousands of lives worldwide. Key applications for Twaron include bullet resistant vests, helmets, and ballistic protection of vehicles.



Twaron-based bullet resistant vests

The threats to modern armies and special police task forces have multiplied, creating the need for protection from all kinds of bullets and fragments as well as stabbing with sharp objects. And these days it's not only soldiers and policemen who are facing increased threats; prison guards, cash carriers and private individuals also need to be protected. The market is seeking better protection and greater comfort. Many of today's protective vests are made of Twaron, which provides enhanced protection, more comfort, and advantageous performance/weight ratios.

Twaron-based helmets

One can hardly imagine a modern soldier or a member of a police special task force without an advanced composite multifunctional helmet in which protection against bullets, shrapnel, grenade fragments, blast effects and mechanical impacts is combined with carrier functionality. Ensuring key aspects such as a high degree of ballistic protection, low weight, durability, and a long life at an acceptable price make this a truly sophisticated product. Benefits for Twaron-based helmets also include lower Back Face Deformation (BFD).

Twaron-based armoring products

Laminated Twaron-based armoring products are successfully used in military and police applications from helicopters to tanks, trucks, armored personnel carriers, and patrol cars. Twaron-based ballistic solutions help preserve vehicle maneuverability, performance, and

payload. Armored vehicles based on Twaron will remain light and maneuverable: compared to ballistic steel there is a 30-60% reduction in weight.

Furthermore, spall liners made of lightweight multiple layers of Twaron fabrics form an extra protective layer inside the vehicle, defending passengers against fragments from hand grenades or secondary fragments from steel armoring plates. And, because of their low weight and excellent flexibility, the Twaron fabrics and laminates can easily be installed in vehicles, both during and after construction. There are Twaron ballistic solutions for multiple levels of threats, from direct fire and shell fragments to high explosives. All offered with a very good price/performance ratio.

Custom-built solutions

At Teijin Aramid, we co-develop custom-built solutions, together with our customers. Thanks to our own dedicated R&D and test facilities, we have been able to develop advanced new materials such as Laminated Fabric Technology (LFT). Over the years we also developed sandwich constructions, which combine ballistic protection with protection against stabbing and front panels tailored to the needs of women soldiers.

With deep insight into the market as well as modern production processes, we offer a very high level of technical support, for example, when manufacturers are developing new products to meet the needs of tomorrow's high-tech soldiers.

For more information, please email us at ballistics@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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