
Innovation happens naturally,
ask DSM Dyneema
chemelot
The chemical innovation community

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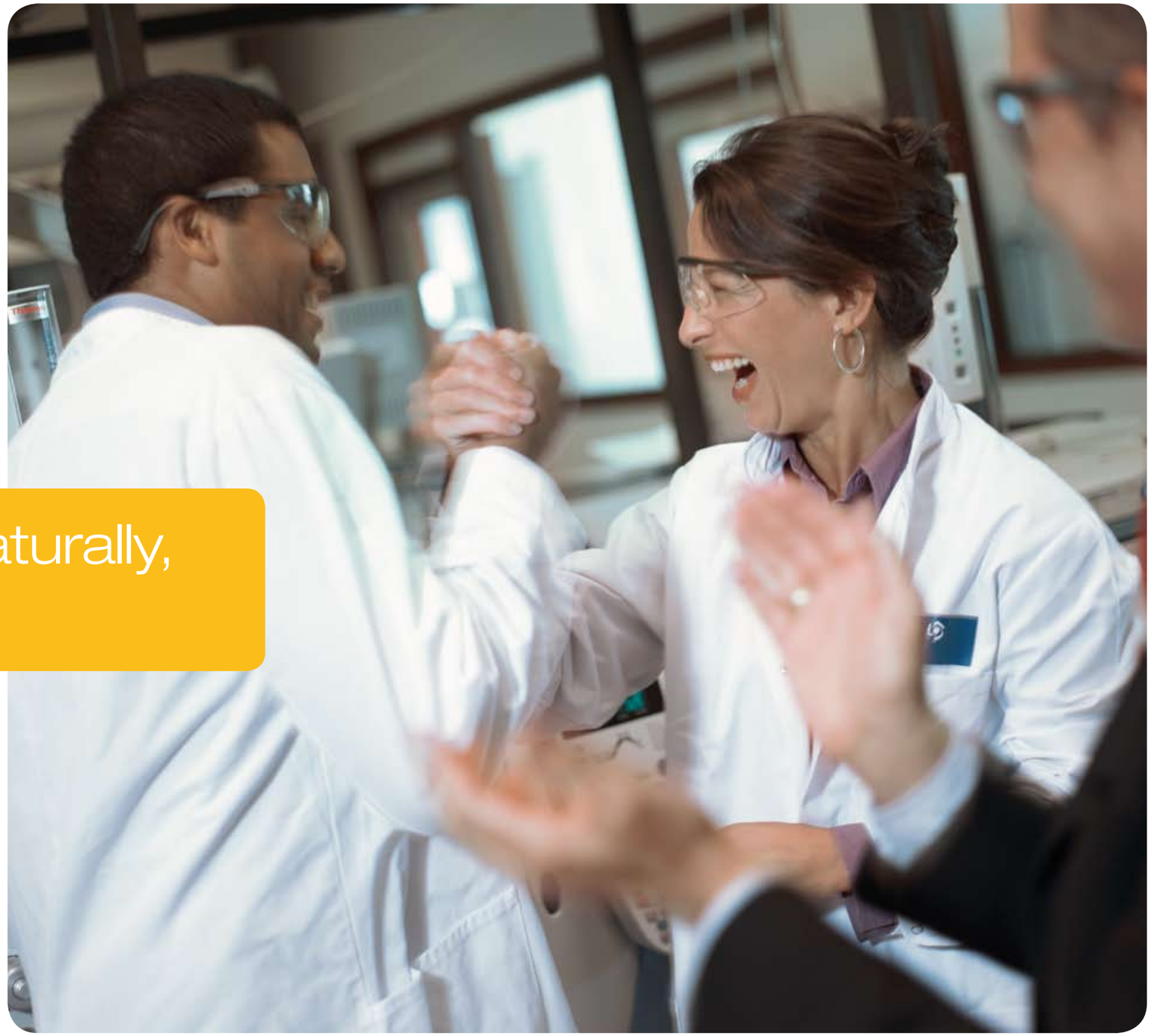

Dyneema® is a unique polyethylene fibre made by DSM that combines maximum strength with minimum weight. Production sites now operate at Heerlen and Greenville and a representative office was added in China in 2005. DSM Dyneema is still keen to take advantage of the specialist knowledge available on the Chemelot Campus. For example, the company frequently uses the research facilities at Chemelot to help streamline its production process and gain more insight into the fibre properties that are important in certain applications. Our findings enable DSM Dyneema's own RT&D department to improve their existing products and develop new ones. It's a process of collaboration that has resulted in ongoing improvements in the quality of this super-strong fibre.

Dyneema®, developed here

Initial research into Dyneema® began at the end of the sixties through researchers working in a DSM laboratory on the Chemelot site. Further product development took place over the following years, both in the lab and at two pilot plants. This was undertaken in close cooperation with companies that had the potential to become Dyneema® customers. It was partly thanks to this collaboration that Dyneema® has developed into the product that it is today - the world's strongest fibre! "Together we discovered that the fibre is extremely suitable for the most diverse applications, from bullet resistant vests to medical applications such as sutures, and tanker mooring lines", said Joost Dubois, DSM Dyneema® spokesman. "Dyneema® can be used as an element in all kinds of applications to help professionals to do a better job, from police officers to surgeons or sailors on an oil tanker."

Best in class, acknowledged globally

DSM Dyneema began operating commercially in 1990. The fibre it produced had a minimum weight, was super strong, floated on water and was highly resistant to wear, moisture, UV exposure and chemicals. It was because of these qualities that it quickly secured a solid market position around the globe. So solid, in fact, that the size of the organization has increased more than 2.5 times in the past five years. Production sites now operate at Heerlen and Greenville and a unit was added in China during 2005. But to retain this enviable position, it is essential that the unique properties of Dyneema® are adequately protected. This is taken care of by DSM Intellectual Property Assets, based on the Chemelot site, whose activities include patent application and protection, trade name protection and prevention of illegal copying. Highly responsible work that requires input from a team of the department's legal experts on a daily basis.

Trusted by the best

Thanks to its many unique properties, the scope of applications for Dyneema® is almost unlimited. For example, the fibre is a major component of ropes, cables and nets for the fishing, shipping and offshore industries. It is also used in safety gloves for the metal processing industry, in fine yarns used for sports products as well as in the medical sector. Dyneema® can also be found in several bullet resistant products and in protective clothing worn by the police and the army. The possibilities are endless and therefore new applications are being discovered all the time.

DSM Dyneema is now working on…

As you would expect, DSM Dyneema is continually working on new developments, mostly in cooperation with its customers, to find new applications and expand its portfolio of products. But at the same time, the organization is always looking for ways to improve its production processes. One example of this is the recent introduction of changes to the way processes are controlled. This was done in close cooperation with the Chemelot researchers to ensure that customers continue to receive the quality they expect from the Dyneema® fibre. In August 2002, Dyneema® was the first product to be certified by the Federal Aviation Administration (FAA) for processing in bullet-resistant cockpit doors for planes flying in the United States. After 9/11, the quality and safety requirements in this field were tightened up, and Dyneema was the first product to meet the stringent new requirements. Once again, this proves that Dyneema® knows how to respond rapidly and adequately to the market requirements and needs of new customers. A DSM brand that we are bound to hear more of in the future.

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