

ABSTRACT - ADVANCED RECYCLING CONFERENCE 2024

Aquafil is a leading global manufacturer of polyamide 6 and the world's largest producer of carpet yarn. With a strong commitment to sustainability and innovation, Aquafil has developed ECONYL®, a chemically recycled polyamide 6 that represents a groundbreaking advancement in the industry.

ECONYL® is produced by chemically recycling both post-consumer and pre-consumer waste, such as old carpets, discarded fishing nets, industrial plastic scraps, and other nylon waste. This process not only diverts waste from landfills and oceans but also gives new life to materials that would otherwise be discarded.

The versatility of ECONYL® allows it to be used in a wide range of applications, including carpet yarn, textile yarn, and polymers and compounds. Importantly, the ECONYL® polymer possesses the same properties as virgin polyamide 6, making it a true drop-in solution for manufacturers seeking to reduce their environmental impact without compromising on quality or performance.

The ECONYL® Regeneration System



The chemical recycling of nylon 6 involves breaking down the polymer into its monomer, caprolactam, through a process called depolymerization. This monomer is then purified and re-polymerized to create new nylon 6, identical in quality to the original. This process allows for the continuous recycling of nylon waste, reducing the need for virgin raw materials and enabling the production of high-performance materials with a significantly lower environmental footprint.

Through the development of ECONYL®, Aquafil is setting new standards for sustainable production, providing high-quality materials that meet the demands of modern industries while contributing to a more circular economy.