

Borealis Daplen™ grades with post-consumer recycled content to help develop Volvo demonstrator vehicle

Value chain cooperation helps increase the share of recycled plastics in vehicles

Borealis and Borouge, leading providers of innovative, value-creating plastics solutions, announce another promising result of value chain cooperation involving the use of post-consumer recycled (PCR) plastics, in this instance to improve the environmental footprint of automotive vehicles. Borealis Daplen™ polypropylene (PP) compound grades composed of PCR and virgin content were used in applications and parts for a specially-built hybrid SUV recently unveiled by leading premium car maker Volvo at the “Ocean Summit” event in Gothenburg, Sweden. The car highlights their ambition to ensure that at least 25% of the plastics in newly launched Volvo cars will be made from sustainable material.

In Europe, EU legislation in the form of the End of Life Vehicles Directive has helped bring about higher rates of reuse, recycling, and recovery of materials from passenger cars and light vehicles. Yet automakers are keen to find additional ways to lower the overall environmental footprint of their models. Polyolefin-based automotive applications have long been viable alternatives to materials like aluminium and conventional engineering plastics, because they facilitate lightweighting while maintaining high performance standards. However, some automotive applications can be made even more sustainable if PCR and virgin plastic material are combined to produce high-end grades with reliable and long-term consistency. Using PCR materials helps use natural resources more wisely, and produces less waste.

In 2014, Borealis was one of the first leading polyolefin suppliers to launch a portfolio of PP compound solutions including PCR content for use in automotive applications. Developed in Europe, the PCR Daplen™ grade portfolio was launched to fulfil industry demand for safe, readily available, and high-quality reclaimed materials with a lower environmental impact. Crucially, the performance and cost efficiency of PCR grades can be equal to that of virgin materials and PCR Daplen grades have the potential for use in a variety of interior, exterior, and under-the-bonnet (UTB) applications.

Value chain cooperation develops new PCR-based automotive applications

As a key supplier to Volvo Cars, Borealis was among those providing PCR-based solutions for a specially-built Volvo XC60 T8 plug-in hybrid SUV. Borealis supplied nearly 10% of the 60 kg of PCR-material used for this demonstrator model. While the model may look like the one currently on the

market, it is in fact different: over 170 components usually made of conventional plastics have now been replaced with light-weight, recycled material equivalents. Two Borealis Daplen grades with PCR content are in use to produce five different parts:

- Borealis Daplen™ MD325SY with 25% PCR, for a UTB application (outer fan belt cover);
- Borealis Daplen™ ME225SY with 25% PCR, for interior and exterior applications (belt cover on left/right-hand side, D-pillar upper, tailgate panel window frame, lid warning triangle).

“We are eager to find new opportunities to put our expertise to use and collaborate with OEMs like Volvo Cars. We deliver high-end grades that make vehicles as safe and high-performance as ever, yet these grades are more environmentally sustainable because they contain PCR,” explains Maria Ciliberti, Borealis Vice President Marketing and New Business Development, Polyolefins. “It is gratifying to see that momentum is building throughout the industry towards a more circular economy. Borealis Daplen PCR grades are a prime example of how we are using Value Creation through Innovation to make plastics more circular.”

The Borealis commitment to the principles of the circular economy means that it engages with members along the entire value chain to explore new ways to improve product design, with particular focus on design for recyclability. It also uses its expertise and experience to collaborate in the development of new applications for end-of-life plastics, as this recent venture with Volvo demonstrates.



Photo: Borealis Daplen™ polypropylene compound grades composed of post-consumer recycled and virgin content were used in applications and parts for a specially-built hybrid SUV by Volvo Cars
Photo: © Volvo Cars

The specially-built Volvo XC60 containing recycled plastic parts was unveiled at the Volvo “Ocean Summit,” an event organised to focus attention on innovative solutions to address the crisis of polluted oceans. Because Borealis is also actively engaged in efforts to prevent marine littering, in particular through its [Project STOP \(Stop Ocean Plastics\)](#), the occasion was a particularly strong symbol of how change can be achieved through cooperation along the value chain, and among industry partners and stakeholders.

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Borealis Automotive: Driving tomorrow

For over 50 years, Borealis has been a leading supplier of innovative polyolefin plastic materials for engineering applications in the automotive industry. Using its unique and proprietary Borstar® technology and its Fibremod™ post-reactor technology for fibre reinforced polypropylene (PP) compounds, Borealis delivers ideal replacement solutions for conventional materials such as metal, rubber and engineering polymers. Borealis continues to discover new material solutions which help facilitate lightweight construction and thus play an important role in enhancing energy efficiency. In automotive vehicles, Borealis' leading-edge polyolefin plastic materials are used in a wide range of exterior, interior, and under-the-bonnet applications, including bumpers, body panels, trims, dashboards, door claddings, climate control and cooling systems, air intake manifolds and battery cases.

About Borealis and Borouge

Borealis is a leading provider of innovative solutions in the fields of polyolefins, base chemicals and fertilizers. With its head office in Vienna, Austria, the company currently has around 6,600 employees and operates in over 120 countries. Borealis generated EUR 7.5 billion in sales revenue and a net profit of EUR 1,095 million in 2017. Mubadala, through its holding company, owns 64% of the company, with the remaining 36% belonging to Austria-based OMV, an integrated, international oil and gas company. Borealis provides services and products to customers around the world in collaboration with Borouge, a joint venture with the Abu Dhabi National Oil Company (ADNOC).

Borealis and Borouge aim to proactively benefit society by taking on real societal challenges and offering real solutions. Both companies are committed to the principles of Responsible Care®, an initiative to improve safety performance within the chemical industry, and work to solve the world's water and sanitation challenges through product innovation and their Water for the World programme.

For more information visit:

www.borealisgroup.com

www.borouge.com

www.stopoceanplastics.com

www.waterfortheworld.net

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