COLLABORATING TO REDUCE PLASTIC OCEAN WASTE

AVIENT™

CASE STUDY: MAXXAM™ REC RECYCLED POLYOLEFIN FORMULATIONS

AVIENT FORMULATES RECYCLED OCEAN-BOUND PLASTICS, MAINTAINING MATERIAL PERFORMANCE AND REDUCING CARBON FOOTPRINT

THE CHALLENGE

The family-owned electrical component supplier, Hager Group, produces electrical switches, sockets, devices, controls, housings, and more for installation in homes and commercial buildings. Hager, a long-standing customer of Avient, has been using a polyolefin material for an outdoor socket. However, they recently reached out to Avient, expressing interest in switching to a more sustainable, recycled material for a new product—the cubyko leaf, a waterproof outdoor socket.

Avient is constantly innovating to enhance its portfolio of sustainable materials. This project was no exception. Hager wanted to utilize more recycled plastic in its products; however, the material needed to perform to the same technical specification as Hager's current prime material. As a visible outdoor part, the material needed good UV resistance, scratch resistance, impact resistance, and a matte finish. Reliable coloration to RAL 7011 and RAL 7035 colors was also required, something hard to provide when using post-consumer recycled (PCR) content, as performance can be more unstable than prime material.

Plastic Bank® was the chosen supplier of the PCR content. As a social enterprise, Plastic Bank is harnessing the value of plastic waste to help end poverty. Their collection communities collect and exchange ocean-bound plastic waste as currency for income and life-improving benefits, including health, work, and life insurance, digital connectivity, grocery vouchers, school supplies, fintech services, and more. The collected material is processed into Social Plastic® feedstock for reuse in products and packaging by some of the world's most advanced companies.

THE SOLUTION

Working with Plastic Bank, Avient expedited its approval as a new supplier, reducing Hager's project timeline. Utilizing the Social Plastic from Plastic Bank, two new Maxxam™ REC Recycled Polyolefin formulations were developed, one in each RAL color requested.

The new grades were formulated to provide a functional replacement for the previous used prime materials while incorporating 50% recycled ocean-bound plastic content. The Maxxam REC Recycled Polyolefin formulations met the required technical specifications, including good UV resistance, scratch resistance, impact resistance, and with a matte finish, making them suitable for use in the cubyko leaf waterproof outdoor socket. The materials were also suitable for laser welding and marking, and pad and inkjet printing for marking the parts' descriptions.

THE IMPACT

The new Maxxam REC Recycled Polyolefin formulations from Avient enabled Hager to bring the new cubyko leaf to market quickly, with a first launch in the French market in January 2024.

The socket performs similarly to those made with the previous virgin grades while enhancing its sustainability credentials, with the final assembly of the cubyko leaf containing 27% ocean-bound plastic content. The new recycled polyolefins have enabled the replacement of fossil fuel-based feedstock with more carbon-friendly recycled ocean-bound plastics. This has helped Plastic Bank in its efforts to prevent plastic waste from entering our oceans and instead use it to reduce poverty.

Using Avient's Product Carbon Footprint Calculator, which has been third-party certified by TÜV Rhineland to ISO 14067 standard, the new Avient formulations enable a 50% carbon footprint reduction compared to the materials previously used.

Avient is pleased to have been part of the collaboration between Plastic Bank and Hager Group, helping one of its recognized customers move towardsreaching its sustainability goals by transforming discarded ocean-bound plastic into high-performance polymers.

If you have a project you are working on that requires a more sustainable material, please visit us at avient.com.

Avient Corporation, 33587 Walker Road, Avon Lake, Ohio USA 44012