Processing of PCR Secondary Raw Materials

Old Fishing Nets Become Children's Watering Cans

Joint project of Kautex and Braskem: awatering can made from maritime waste recyclate.

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Kautex Maschinenbau and its partner Braskem demonstrated at K 2022 that upcycling of post-consumer waste (PCR) with appropriate measures leads to ever better results and that the compounds used can be successfully processed into monolayer blow molded products. A children's watering can served as an example application for the highlighted project.

Braskem is one of the largest polyolefin producer in the Americas. In cooperation with a company specialized in mechanically recycling plastic fiber waste into PCR, the Brazilian company produces a secondary PE compound from collected fishing nets. Kautex then further processed this into children's watering cans using the blow molding process.

It should be emphasized that the quality of the fishing net PCR was so good, for example in terms of consistent viscosity, that the cans could be produced in a continuous blow molding process without the use of an accumulator head. The project also showed that so-called "maritime waste" recyclates are ideally suited for applications in the garden sector, including playground equipment, garden furniture, and tool sheds.

Andreas Menzlin, Head of Technical Center, also emphasizes the fact that the production of the watering can with Braskem material could be realized completely in-house: "The small watering can is 100 percent made by Kautex. From the design of the product by our colleagues in Portugal to the construction of the mold at our plant in Shunde, China, to the production at our Technical Center in Bonn, Germany, all process steps were carried out in-house."

In a second project, further in-house tests at Kautex Technical Center in Bonn were carried out. Here, sorted HDPE PCR from for example milk packaging and shampoo bottles was upgraded in a sophisticated upcycling process.

The PCR material came from PreZero, an international environmental services provider active in waste and recycling management and part of the Germany-based Schwarz Group. In this joint project, the Austrian recycling machine manufacturer Erema has taken on further processing of the secondary material, including special degassing steps and the use of additives to further improve the material quality. These were contributed by Baerlocher, a global acting additive company.

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