

Company News

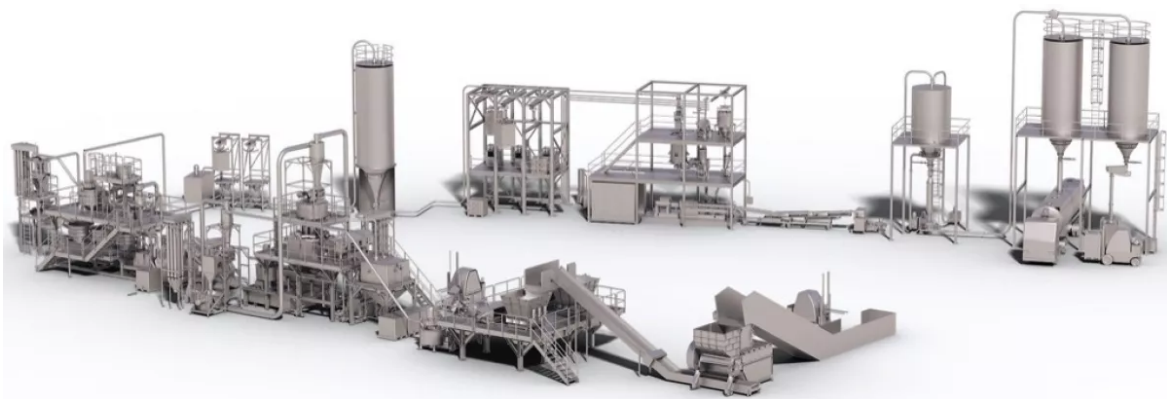
Coperion and Herbold Meckesheim deliver Bottle-to-Bottle Recycling Plant to Magpet

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Stuttgart, Germany -

or Indian preform and plastic packaging manufacturer Magpet Polymer Pvt Ltd, Coperion and Herbold Meckesheim are collaborating technologies in construction of an entire plant for bottle-to-bottle recycling from a single source. In addition to mechanical processing of used PET bottles, the recycling system encompasses all process steps leading up to extrusion with a ZSK twin screw extruder, including pelletizing and an SSP (Solid State Polycondensation) reactor.

This PET bottle recycling system is designed for a throughput of 5,500 kg/h. It will deliver PET recyclate that is approved by the European Food Safety Administration (EFSA) and the U.S. Food and Drug Administration (FDA) for direct contact with food. Moreover, the PET pellets manufactured on this bottle-to-bottle line are brand owner approved.



Coperion and Herbold Meckesheim design especially efficient plants for plastic recycling – from mechanical pretreatment to finished pellets.

(Photo: ©Coperion)

“Magpet has always pursued the goal to be a first mover when it comes to embracing new technology,” said Devendra Surana, Managing Director of Magpet, a part of Magnum Group. “This PET recycling unit is a big step in that direction. And it goes hand in hand with our efforts to take over business responsibly for a bigger eco purpose. We are excited to partner with Herbold and Coperion to set up this state-of-the-art PET bottle recycling line in India.”

Entire high-efficiency System from a Single Source

Magpet awarded the contract for the entire system to Coperion and Herbold Meckesheim, operating companies of Hillenbrand, as they have optimally coordinated their technologies and realized efficient plastic recycling solutions that consistently and reliably deliver high PET recycle quality.

Coperion’s and Herbold Meckesheim’s bottle-to-bottle plants enable all recyclates to be processed together, even if they exhibit different IV (Intrinsic Viscosity) values or fluctuating bulk densities. What is more, the Coperion-Herbold solution saves on operating costs, logistics costs, and energy consumption in comparison to conventional PET recycling processes.

The bottle-to-bottle recycling system first processes the PET bottles into flakes. For this purpose, Herbold uses granulators with forced feeding and washing system technologies that efficiently and gently process the PET to minimize material loss due to fines formation and thus maximize yield.

This preprocessing is followed by conveying and feeding into the ZSK recycling twin screw extruder. There, the PET regrind is gently melted, intensively dispersed, and processed into a homogeneous mass. The ZSK’s twin screw technology efficiently transfers the energy into the melt. Thanks to the twin screw extruder’s high 18 Nm/cm³ torque, the PET’s residence time in the extruder is short. Processing takes place at low temperatures, polymer chain degradation is minimal, and the product quality achieved is high. Volatile components such as monomers, oligomers and water are removed from the melt and purged.

Following discharge from the ZSK recycling extruder, the still-warm material stream is transferred via a gear pump to an underwater granulator and an SSP reactor, where it is then condensed and decontaminated.

“In the bottle-to-bottle recycling plant for Magpet, we have united the advantages of Coperion and Herbold Meckesheim technologies. All process steps, from mechanical pretreatment to producing finished recyclate, are optimally coordinated to produce PET of high-quality – and with maximum energy efficiency,” says Jochen Schofer, Head of Sales Recycling at Coperion.

“With this bottle-to-bottle recycling system Magpet takes the next step in their journey. We wish Magpet every success and look forward to continuing to work together,” adds Mehmet Kaya, Sales Team Leader Asia for Herbold Meckesheim.