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Press Release

Coperion extruder and EcoFresh silo degassing for food-safe recompounds

FDA confirms: Food-Grade rHDPE and rPP using Coperion Recycling Technology

Stuttgart, June 2026 – Coperion has received a Letter of No Objection (LNO) from the U.S. Food and Drug Administration (FDA) for its high-density polyethylene (HDPE) and polypropylene (PP) recycling technology. The letter confirms that the combination of Coperion twin screw extruders and EcoFresh silo degassing used in the manufacture of rHDPE and rPP fulfills the requirements for direct contact with food.

Coperion is the first provider of complete decontamination systems featuring twin screw extruders and EcoFresh silo degassing to offer the market a highly efficient solution for the production of food-grade recyclates, covering capacities from small throughputs up to 6,000 kg/h. Coperion achieves the level of decontamination of rHDPE and rPP required for the LNO through the interplay of these two proven technologies. The quality of this solution was validated in a challenge test and confirmed by the FDA.

This opens up new possibilities for the recycling of food packaging: For example, food-grade regranulate can be produced from HDPE milk jugs or fruit juice bottles and then reused to manufacture similar bottles or related products. Food containers, cups, bowls and trays made of PP can be recycled into new packaging for direct contact with food.

Manufacturing food-grade rHDPE and rPP

June 2026

Manufacturing food-safe recyclates is one of the greatest challenges in plastics recycling. Such regranulates must be certified as suitable for direct contact with food, fulfilling the highest requirements for purity and safety.

“The FDA's LNO means that rHDPE and rPP manufactured with our technologies can be used for new food packaging in proportions up to 100 percent”, said Stefan Lachenmayer, Global Commercial Director Recycling at Coperion. “As a result, we provide recyclers the assurance that our energy-efficient mechanical recycling process manufactures high-quality recyclate for use cases A-H. These include, for example, packaging for high-temperature, heat-sterilized, pasteurized or frozen products.”

Process steps for food safety

Significant for this Coperion system's high decontamination performance are the co-rotating twin screw extruder's high degassing performance and the efficient EcoFresh silo degassing system, where even low residence times are enough to reliably remove low-volatility migratory substances.

Raw material for the Coperion food-safe rHDPE recyclate process consists of used HDPE beverage bottles or their caps. The material stream for rPP compounds consists of vegetable trays, packaging, yogurt containers, and the like.

The material is fed into the extruder via Coperion K-Tron gravimetric feeders, where it is first melted, intensively mixed, homogenized and degassed using twin screws. Coperion profits from its many years of experience in melt and solid devolatilization when designing process parameters and has configured both the process and the screw configuration to optimally meet the requirements of the respective recycling application.

Plastic is purified of solid foreign materials via a melt filter and then pelletized. Next the recompounds pass a second decontamination step in the newly developed and standardized EcoFresh silo degassing unit.

Food-grade tests at Coperion Recycling Innovation Center

Recyclers can test the decontamination performance of the Coperion extruder and EcoFresh at the Coperion Recycling Innovation Center where both technologies are available for extensive

trails using original material streams. Together with Herbold Meckesheim's Test Center, where grinding and cleaning of raw materials takes place, Coperion can reproduce the entire recycling process in its test centers.

"The basis for the suitability of our HDPE and PP recycling solutions for manufacturing food-contact materials lies in our integrated approach as a system provider. We look at the entire process and apply our decontamination technologies precisely at specific points in the process chain. It is their optimal interplay that makes the efficient achievement of the necessary level of decontamination possible", says Stefan Lachenmayer.

About Coperion
Coperion (www.coperion.com) is a global industry and technology leader in compounding and extrusion systems, size reduction, washing, separating, drying, agglomeration, feeding, weighing, material handling and pneumatic conveying systems, as well as milling, mixing, thermal processing, dust collection and other services. Coperion develops, produces, and services plants, machinery, and components for the plastics and plastics recycling, chemical, battery, minerals, food and pharmaceutical industries. Coperion employs more than 5,000 people in its divisions, Performance Materials and Food, Health & Nutrition - at over 50 sales and service locations worldwide.

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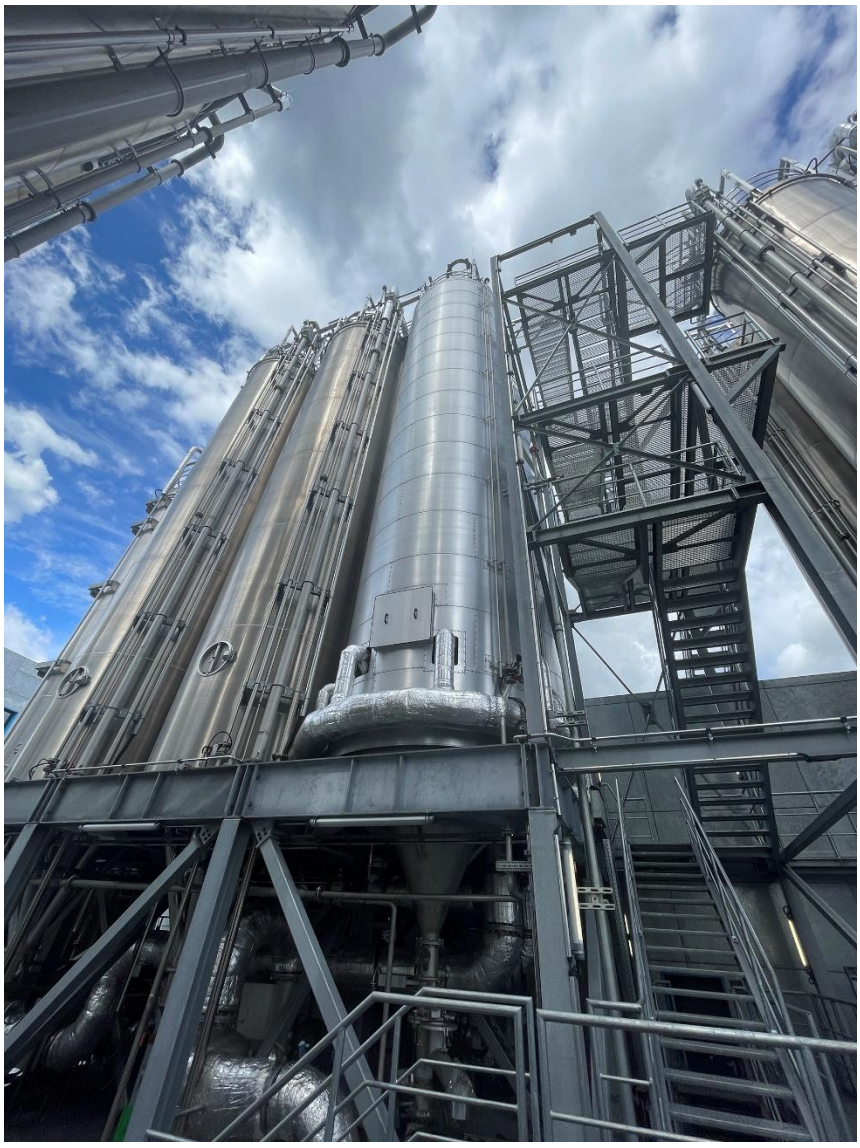
June 2026



Coperion’s EcoFresh silo degassing system and its twin screw extruders have received a Letter of No Objection (LNO) from the FDA and are therefore suitable for the production of food-grade HDPE and PP recyclates.

Photo: Coperion, Stuttgart Germany