

Abstract: How Delamination Recycling Can Enable the Access to Underutilized Feedstocks for Recycled Plastics

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Saperatec is a pioneering company, developing delamination recycling for packaging materials to industrial maturity since 2010 and has launched an industrial recycling plant for beverage carton and aluminum barrier flexible packaging materials in Dessau-Roßlau (Germany) with a capacity of over 30.000 t/year. Delamination recycling is a hot wash process in which a multilayer material with polymer and metal layers is treated using a specially formulated separation fluid. This fluid enters the boundary layers between the different materials and separates the layers without dissolving or transforming the respective materials. This enables the mechanical recycling and recovery of raw materials from packaging waste, which was formerly condemned to “energetic recycling” and can keep packaging materials in a closed loop.

In the Saperatec plant in Dessau polyolefins are recovered at high quality to produce film-grade LDPE and other recycled plastics for packaging applications. Aluminum is also recovered with high purity. All chemicals used in the process are listed in European food contact regulation without specific migration limits and are recirculated many times. This makes the delamination recycling an extraordinary environmentally friendly process and gives access to new feedstocks for recycled products.