

Press release

Oberdiessbach, February 22th, 2022

Closing the loop with aluminum barrier tubes

Hoffmann Neopac has become the first tube manufacturer to sign a partnership with Saperatec. The manufacturer of barrier tubes for pharmaceuticals, cosmetics and oral care products will supply its production waste to Saperatec, the first industrial recycling plant for aluminum laminate composites, upon its opening in mid-2023.

In Europe, around 11.5 billion tons of plastic, aluminum and laminate tubes are produced annually (based on ETMA, 2020). Of these, 38% are laminate tubes, with the majority comprising aluminum barrier laminates (ABL). Such tubes cannot currently be industrially separated and recycled in existing recycling facilities.

ABL tubes - like all other ABL packaging waste - are usually downcycled or incinerated and, depending on the country, packaging may even end up in landfills.

Mono-material Tubes

To further reduce aluminum waste, Neopac recently introduced innovative barrier tubes comprised of mono-material construction. These bring the advantage of being recyclable in the PE or PP material stream, and therefore reused for new applications. But of course, tube products with aluminum barriers will continue to be necessary, as these meet the most stringent requirements for barrier properties, especially for pharmaceutical ointments and creams that must go through a regulatory approval process. Such tubes represent around 10% of the laminate tubes manufactured in Europe.

Material composites

In parallel with efforts to optimize tube design for improved recycling, progress is being made in the recycling of all raw materials from aluminum-containing material composites. A particularly promising technology is spearheaded by Saperatec GmbH; in a pilot plant, the company has already demonstrated the ability to break down multilayer composite materials such as PE/Al into their individual materials, thus enabling a high level of material recycling.

Utilizing a special washing technique, Saperatec separates plastic and aluminum layers without dissolving them. A laboratory study at Saperatec in spring 2021 with various ABL tubes from Neopac showed that Polyfoil® tubes, for example, can be completely separated in this fashion.

Industrial scale

Neopac The Tube	Hoffmann Neopac AG Burgdorfstrasse 22 3672 Oberdiessbach Switzerland	Neopac Hungary Ltd. Hoffmann str. 1 4031 Debrecen Hungary	Neopac US, Inc. 4940 Lamm Road Wilson, NC 27893 USA	www.neopac.com
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Following the separation process, the materials are sorted. This produces fractions of polyethylene and aluminum, which can be recycled to high quality in commercially available plants.

In the medium term, this process will also make it possible to recycle composite materials made of aluminum and plastic with high recycling rates.

Saperatec began construction of its Dessau, Germany industrial separation facility in December 2021. The plant is scheduled to commence operation in mid-2023 and will then recycle composite packaging waste made of aluminum, plastic and paper. In a first step, Neopac plans to feed production waste generated at Saperatec in larger quantities to the special separation process in the future. In a second step, Neopac and Saperatec will examine the technical possibilities for applying recycled, materially separated production waste to the production of new tubes. In this way, the two partners are making an important contribution to reprocessing aluminum-containing packaging, such as ABL tubes, for further high-quality uses.

The process will be improved and perfected using additional technologies currently in development, which will allow intelligent sorting of ABL packaging into an ABL packaging material stream. These include HolyGrail 2.0 technology (<https://www.digitalwatermarks.eu/>), and eddy current detection in combination with NIR PO detection.

Product safety and sustainability

"In addition to the already existing environmentally friendly and recyclable tubes from our EcoDesign portfolio, we are committed to a recycling solution for our conventional Polyfoil ABL tubes. With this new initiative, we will offer our customers the best possible balance between product safety and sustainability," says Peter Bossert, Head of Materials Development at Hoffmann Neopac AG. "As early as this year, we will make a portion of our production waste available to Saperatec to demonstrate its recyclability on an industrial scale, per the promising laboratory tests that have been performed. With the pending recycling of ABL tubes, we are closing a recycling gap in our portfolio."

High-quality plastic recyclates

Thorsten Hornung, Managing Director of Saperatec GmbH is delighted: "We are grateful for innovative companies such as Hoffmann Neopac AG, which are actively committed to making progress on the circular economy and are prepared to make their production waste available to us for high-quality recycling. With the construction of the first recycling plant for composite materials made of plastic, paper and aluminum, we aim to produce high-quality, film-ready plastic recyclates for packaging applications while returning the recovered aluminum to the material cycle."

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About Hoffmann Neopac AG

Hoffmann Neopac is a privately held company headquartered in Thun, Switzerland. The Group produces high-quality metal and plastic packaging at six sites: HOFFMANN cans in Thun and in Holland; Polyfoil® and plastic tubes at NEOPAC in Switzerland, Hungary and the USA; and 3D Neopac in India. Long-standing customers include pharmaceutical, cosmetics and consumer goods manufacturers in the European, North American and Asian markets.

The company employs around 1250 people and has a capacity of 1.3 billion tubes and 400 million cans per year. The company places great emphasis on the sustainability of its manufacturing processes and organizational culture and carries a particularly environmentally conscious packaging portfolio in its offering. The company participates in the sustainability initiatives RecyClass, CosPaTox, STINA and was the first tube manufacturer member of Ceflex. For more information, visit www.neopac.com.

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About Saperatec GmbH

Saperatec develops wet-mechanical recycling processes for thin-layer composite materials made of plastic, metal, paper and glass. At its site in Dessau in Saxony-Anhalt, the company is building its first recycling plant for composite packaging made of plastic, aluminum and paper. From 2023, around 18,000 tons of packaging waste will be processed there every year and high-quality plastic recyclates and aluminum will be produced from them. With currently around 15 employees, Saperatec wants to make an important contribution to the sustainability of high-performance composite materials.

IMAGE

Top: Neopac Polyfoil® tubes, shredded,

Bottom: Separated polyethylene and aluminum layers after Saperatec process.

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