

Press release

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Innovation for more sustainability: new bio-based thermoplastic adhesive

For the bonding of compostable plastic coatings, Follmann and its subsidiary Sealock have developed a sustainable adhesive made from bio-based raw materials / First successful use in cardboard takeaway cups certified to EN 13432

Climate change makes a rethink in both industry and politics as well as among consumers unavoidable. An important global goal is to break away from fossil fuels and significantly reduce CO₂ emissions. With its newly developed adhesive from regenerative raw materials, Follmann offers its customers the opportunity to produce fully compostable and therefore environmentally friendly products.

In Germany alone, according to a recent study by the Federal Environmental Agency, 2.8 billion disposable takeaway coffee cups are consumed each year, of which 40 per cent are pure plastic cups and 60 per cent are paper cups. However, these are coated on the inside with plastic and glued and thus, like disposable plastic cups, not environmentally friendly. In order to make disposable paper cups fully compostable, a change to an environmentally friendly material for the inner coating is needed, which also concerns the adhesive. Follmann and its subsidiary Sealock have focused on developing such an adhesive. George Thomas, Technical R&D Manager at the Sealock Group, investigated various organic raw materials, related supply chains and the associated innovation potential. "The challenge was to find suitable renewable raw materials that could also be used in adhesive applications and adhesive manufacturing on an industrial scale," explains George Thomas. "On the basis of in-depth research and engagement with this topic, we finally succeeded in developing a new bio-based thermoplastic adhesive, which is suitable, among other things, for bonding the environmentally friendly interior coating of paper cups. This sustainable alternative replaces the previous, environmentally harmful bonding of the coatings."

The bio-based polymers contained in the adhesive are made from renewable sources such as sugar cane or corn. The advantage is that bio-based, renewable raw materials can reduce CO₂ emissions compared to fossil fuels in the supply chain. The overall product thus makes a positive contribution to climate protection.

Application examples



A well-known manufacturer of takeaway coffee cups, who places a high value on sustainability, is using the new adhesive for the environmentally friendly bonding of its organic paper cups, which are manufactured in Great Britain and distributed throughout Western Europe. The paper cups are fully biodegradable, thanks to sustainable forestry paper fibres, the inner coating made from eco-friendly bioplastics and the adhesive made from regenerative raw materials.

However, use in takeaway cups is just one of many possible applications. As a result of the bill passed in the European Parliament in October 2018 prohibiting certain plastic products from 2021, such as drinking straws and disposable tableware and cutlery, manufacturers are under pressure to develop and produce environmentally friendly alternatives. The new sustainable adhesive can be used for these as well, for instance for paper drinking straws or for different packaging such as for breakfast cereals.

“To protect the environment and out of responsibility to current and future generations, we see it as our duty to provide our customers with sustainable products and solutions,” says Dr Joern Kuester, Managing Director of Follmann. “We are therefore pleased to offer an environmentally friendly product with our new bio-based thermoplastic adhesive, while making an important contribution to the circular economy.”

The company

Follmann is a family-owned company operating in the international chemicals industry. As part of the Minden-based Follmann Chemie Group the company achieved a turnover of 100 million euros in 2018. The Follmann product range comprises water-based printing inks and low migration adhesives for the packaging industry, decorative coatings for the wallpaper and décor industries, high-performance adhesives for the wood and furniture industries and functional coatings and microcapsules for a wide range of other industries. Renowned for its innovative products and customised solutions, Follmann has long been recognised as a leading market force for speciality chemicals in Europe.

Successfully represented worldwide by a number of affiliates, local distributors and sales offices, the Follmann Chemie Group, together with its subsidiaries, Follmann and Triflex, now has more than 780 employees and in 2018 achieved a turnover of more than 200 million euros.

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