

## Press Release

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Covestro and GeBioM expand their cooperation for orthopedic footwear

### 3D-printed TPU insoles

#### More sustainable production of individual products

Materials manufacturer [Covestro](#) and orthopedic service provider [GeBioM mbH](#), based in Münster, Germany, are expanding their cooperation in the field of orthopedic footwear. In addition to producing [lasts](#) and trial shoes, they now support orthopedic shoemakers in the production of custom insoles using 3D printing. A new Addigy® FPU 79A thermoplastic polyurethane (TPU) from Covestro is used in the form of filaments. Together with Danish printer partner [Create it REAL](#), the companies offer a novel and sustainable solution for the digital production of shoe insoles.

"Our new TPU plastic and a printer developed specifically for this application make it possible to print very soft structures. The material and printer were harmonized during development to achieve a perfect result," explains Lukas Breuers, 3D printing expert at Covestro. "With the help of the automated software solution, soft and hard structures can be combined in a shoe insole, achieving a level of customization that was previously virtually impossible." The TPU also meets the requirements for medical devices with regard to cytotoxicity and skin sensitization in accordance with the DIN EN ISO 10993-5 and 10993-10 standards.

In addition to functionality, the development of the material also focused on its ecological footprint, as Marcel Domenghino, Managing Director of GeBioM, points out: "It was important to us that the new solution also allows for improved sustainability. Currently, the production of insoles also generates large amounts of waste. Moreover, the insoles themselves are hazardous waste after use. With 3D printing, we now enable our customers to produce in a waste-free manner by using only the material that is needed for the insoles."



### **Aiming for recyclable material**

Covestro is currently working on a recyclable TPU for this application and is developing opportunities with GeBioM and value chain partners to recover used insoles for recycling. Already, the spools on which the filament is wound are reused. The development is part of a global strategic program to fully align the company with the Circular Economy. Components of the program include innovative recycling technologies and the increased use of alternative raw materials such as biomass, CO<sub>2</sub> and plastic waste, as well as renewable energy.

Covestro has been committed to developing innovative material solutions for additive manufacturing products for years and offers a versatile product range under the Addigy® brand, including for [orthopedic shoe insoles](#). Just recently, the company also significantly strengthened its 3D-printing portfolio with the acquisition of the Resins & Functional Materials business of the Dutch DSM Group.

### **About GeBioM:**

The GeBioM Group is a family-run company with headquarters in Münster, Germany. The company's focus is on the digitalization of biomechanical applications. In addition to activities in various research projects, mainly with the topic of pressure measurement on the body, the company develops software and technology solutions for various topics. Software and technology for the orthopedic trade are offered via the subsidiary [go-tec GmbH](#). In this area, the group is now strengthening its 3D printing commitment with CUBIX technology. CUBIX was developed as a component of the company's own CAD application and enables the individual setting of degrees of hardness in insoles, which are subsequently 3D printed.

### **About Covestro:**

With sales of EUR 10.7 billion in 2020, Covestro is among the world's largest polymer companies. Business activities are focused on the manufacture of high-tech polymer materials and the development of innovative, sustainable solutions for products used in many areas of everyday life. In doing so, Covestro is fully aligning itself to the Circular Economy. Its main customers are the automotive and transport industries, the construction industry, the furniture and wood processing industries, and the electrical, electronics, and household appliance industries. Other sectors include sports and leisure, cosmetics, healthcare and the chemical industry itself. As of the end of 2020, Covestro produces at 33 sites worldwide and employs around 16,500 people (converted to full-time positions).

### **Forward-looking statements**

This press release may contain forward-looking statements based on current assumptions and forecasts made by Covestro AG management. Various known and unknown risks, uncertainties, and other factors could lead to material differences between the actual future results, financial situation, development, or performance of the company and the estimates provided here. These factors include those discussed in



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