

# Press Release



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Covestro: premiere at Pharmapack 2019 on February 6 and 7 in Paris

## **Integrated syringe closures made of high-temperature polycarbonate**

- **Hot steam sterilizable, impact resistant and dimensionally stable**
- **Simplified manufacturing process using 2-component injection molding technology**
- **Comprehensive customer service for component development**

The market for prefilled syringes is currently experiencing strong growth – for example, in systems for the treatment of chronic diseases such as rheumatism. The design of such injection systems is primarily concerned with ease of use to ensure that the patient is reliably supplied with the intended dose of the active substance. The adapter for later screwing in the needle and the syringe cap plays a key role here.

With Gx TELC (Tamper Evident Luerlock Closure), [Gerresheimer AG](#) is offering an integrated solution which combines both functions in a single component and also enables tamper-evident protection of the active ingredient. The medical technology specialist based in Düsseldorf chose the [Apec® 1745](#) construction material from [Covestro](#) as the material for the adapter. For the first time, the company is participating at [Pharmapack 2019](#) trade fair on February 6 and 7 in Paris, and will present this development at its booth number C94.

### **Resistant to high temperatures and impacts**

The transparent high-temperature polycarbonate is characterized by its high heat resistance and can be sterilized using conventional methods such as gamma rays or ethylene oxide. "In addition, it is dimensionally stable and dimensionally accurate at high temperatures, so that the entire component does not warp after hot steam sterilization at 143 °C, for example. As a result, the closure for opening the syringe remains defined in every situation and enables



an easy screwing in of the tube," explains Dr. Wenzel Novak, global senior director business development at Gerresheimer. Another advantage of the plastic is its high impact strength. It protects the adapter from damage, for example in the event of impacts.

### **Two functions in one component**

The system comprising an adapter and a closure is produced by two-component injection molding as a hard-soft combination. First the adapter is made of copolycarbonate, then the cap is injected with a thermoplastic elastomer. "The hard thermoplastic and the soft elastomer form a firm adhesive layer. There are no chemical reactions that could cause increased torques," explains Dr. Martin Doebler, medical technology specialist at Covestro.

The combination of closure and adapter in one component simplifies the manufacturing process and means greater cost-effectiveness. The person using the syringes also benefits: he only has to mount one connected part on the syringes. Turning the cap to open the syringes releases tabs that spread and prevent the cap from closing again. This means that the syringe cannot be opened and closed unnoticed. This tamper-evident feature prevents misuse of the systems and counterfeit products with regard to medicines.

### **Support in material selection, application technology and processes**

Covestro provided Gerresheimer with extensive support during the development of the complex component – including recommendations on the correct choice of material and technical application advice. In addition, experts from the polymer manufacturer were on hand to provide advice and assistance in the design of the manufacturing process.

Apec<sup>®</sup> 1745 is no "stranger" in medical technology. "The biocompatible material meets the requirements of the ISO 10993-1 standard for the biological evaluation of medical devices," says Barbara Giershausen, key accounter for Gerresheimer. "It is used, for example, to manufacture films for special filter housings or respiratory masks."



**About Covestro:**

With 2017 sales of EUR 14.1 billion, 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 solutions for products used in many areas of daily life. The main segments served are the automotive, construction, wood processing and furniture, and electrical and electronics industries. Other sectors include sports and leisure, cosmetics, health and the chemical industry itself. Covestro has 30 production sites worldwide and employs approximately 16,200 people (calculated as full-time equivalents) at the end of 2017.

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