

# Press Release



Leverkusen,  
May 6, 2019

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Covestro at the Battery Show in Stuttgart from May 7–9, 2019

## Material expertise for future mobility

### Tailor-made plastics protect the heart of electric cars

Trends such as climate and resource protection, but also increasing mobility, are spurring the development of alternative drive technologies, including electromobility. The core element of future mobility concepts is a powerful lithium-ion battery. It will be part of the powertrain but should also enable new forms of connectivity and autonomous driving.

[Covestro](#) has many years of experience with covering lithium-ion batteries for laptops and other electronic devices and has developed various polycarbonate blends for this purpose. Due to their favorable property profile, the materials are also well suited for manufacturing modules, housing parts, cell holders and crash absorbers for electric car batteries. They are lightweight yet robust and dimensionally stable and, depending on requirements, they also come equipped with a flame retardant.

At booth number 369 at the [Battery Show](#) in Stuttgart, the company will present its current developments with thermoplastics, but also battery components that provide good impact protection and are efficiently manufactured from polyurethane using the pultrusion process.

### Efficient mass production

“A current focus of our activities is the development of processes for the efficient mass production of complex plastic parts for batteries,” explains Dr. Julian Marschweski, expert for electromobility at Covestro. “In order to accommodate as many cells as possible in the battery’s interior, our flame-retardant polycarbonate blends must be processed into especially thin-walled parts.”



A current cooperation between Covestro and the adhesive manufacturer Henkel involves permanently bonding plastic parts in high-voltage batteries with the help of UV-activated Loctite® adhesives. Together the partners are testing this on injection-molded parts made of the flame-retardant PC+ABS blend Bayblend® FR3040 EV. At a thickness of only one millimeter, the plastic already meets category V-0 of the Underwriters Laboratories' UL94 flammability rating but shows good permeability for UV radiation in the wavelength range above 380 nanometers.

One possible application could be the permanent bond of cylindrical battery cells with the surrounding cell holder. The Loctite® adhesives are processed as a single-component system and harden under UV light within less than 15 seconds. Therefore, the combination of UV-permeable plastic and fast-curing adhesive enables the short cycle times that are required for the mass production of battery modules and battery packs.

#### **Maximum impact protection**

In case of impact, lithium-ion batteries must meet special safety requirements. Covestro has developed a complete concept with different materials, in order to provide battery modules with maximum protection in such a case. The bottom part of the battery case obtains its stability from profiles, which are continually manufactured from continuous glass fibers or carbon fibers and a duroplastic matrix from Baydur® PUL using the pultrusion process.

The profiles are strongest in a longitudinal direction and keep battery modules safely in their shape, as documented in standard industry side-impact protection tests. At the same time, components can be manufactured efficiently and cost-effectively, and they can be easily combined with other materials.

#### **About Covestro:**

With 2018 sales of EUR 14.6 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 16,800 people (calculated as full-time equivalents) at the end of 2018.

*This press release is available for download from the Covestro press server at [www.covestro.com](http://www.covestro.com). Photos are available there for download as well. Please acknowledge the source of any pictures used.*



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