

News Release

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Small and incredibly fast – new connector system with Ultradur®

- Connector system with Ultradur® enables space saving of up to 60%
- Faster data transmission for the use of electronic devices in cars

The transformation of the car continues. Alternative powertrains, autonomous driving and the urge for more sustainability impact the vehicle design and driving experience. Particularly, the car interior is experiencing a unique transformation. It is changing into a mobile office and living room. Applications such as the instrument panel are transformed into entertainment units with screens for video conferencing. Electronic devices with additional functions require ever higher data rates. This represents immense requirements for the high-performance equipment and, thus, for the electronic components and materials used. In addition, it is necessary to reduce weight and to use smaller components due to less space.

MD ELEKTRONIK has taken on these challenges and, with the support of BASF's plastics technology expertise, was able to successfully develop the new connector system "C-KLIC" based on USB Type-C standard. With Ultradur® B 4300 G4, a glass fiber-reinforced polybutylene terephthalate (PBT) is used which meets the high requirements and, hence, led to a successful conclusion of the project. This innovation is suitable for use in vehicles and enables space saving of up to 60% compared to standard USB ports due to excellent material properties. Moreover, the device convinces with a data transfer rate of >10GB/s and optional USB Power Delivery.

Success factor: Trusting partnership

"The good cooperation between both companies was the key to success," emphasize Markus Kaaserer, Expert Techno Polymers and Johannes Trä, Director Development at MD ELEKTRONIK. "Our goal was to produce as many individual parts of the connector system as possible with one identical material. This simplifies processing, is much more efficient and contributes to sustainability by reducing material changes on the production machines. Thanks to BASF's extensive product portfolio, we had several solutions to choose from."

Due to the outstanding material properties, Ultradur® is used in the CPA element, coding housing and internal overmolding. Especially in the internal component the PBT displays its full strength. Thanks to excellent electrical properties and superb dimensional stability, the engineering plastic protects the sensitive electronics from external influences like humidity and dirt. Compared to a standard USB charging module with integrated electronics, the new connector system can be produced in much smaller dimensions which saves installation space and weight.

"This new development underscores the shift towards infotainment in the car interior," says Bernd Skupin, Global Key Account Manager from BASF's Performance Materials division. "The connector system enables much greater data transmission than systems used in current cars. With the ever-increasing demand for high-performance electronic devices in vehicles, we can use our expertise to provide excellent support for new developments."

"Moreover, the Ultradur® fulfills another important aspect. Due to the very good dimensional stability and low humidity absorption, the tight tolerances can be maintained regardless of the ambient conditions in the vehicle", adds Volker Zeiher, Senior Specialist Technical Development at BASF.

Consequently, this automotive-compatible connector design represents an ideal solution for future vehicle concepts. Which is another step towards the living room on wheels.

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