

Potting compounds for reliable sensor and antenna technologies in the automotive sector

Ostfildern-Kemnat, Germany. From flush exterior door handles to keyless functions – customised polybutadiene potting compounds from WEVO-CHEMIE GmbH play a big part in innovative functionalities and the brand-specific design of today’s vehicle access systems. The tailor-made materials provide long-term protection for the antennas and sensors essential for these systems, guarantee dependable transmission of radio waves and enable an efficient production process. To this end, Wevo matches properties such as the dielectric properties, rheology or pot life to the specific requirements – even for small quantities. In addition, the materials can be used for LTE antennas, lidar, radar and TPMS sensors as well as NFC chips.

Flush exterior door handles that, for example, deploy automatically when the driver walks up to the car are now a design trait of many of today’s vehicles. What’s more, technical options such as keyless functions are also increasingly being implemented. Specially optimised, polybutadiene-based potting compounds from Wevo offer reliable protection for the sensors and antennas necessary for these functions. Among other things, the materials have been modified to provide low and stable dielectric properties, which ensure optimal transmissibility for radio waves across wide operating-temperature and frequency ranges. This contributes to lasting, interference-free communication between the sensors and antennas built into the door handle or B-pillar and the car key or owner’s smartphone.

Efficient production process thanks to Wevo potting compounds

To realise brand-specific designs, Wevo’s developers have, among other things, adjusted the rheology of the potting compounds. Component-specific adaptation prevents the materials from flowing through small production process-related cavities into areas they should not reach – and causing shadows in the illuminated door handle recesses, for instance. This makes it possible to dispense with barrier materials that would otherwise be required – and ultimately leads to cost savings and a more efficient production process.

Wevo ensures adaption to downstream process steps by optimising their flow behaviour and the curing time of the polybutadienes. Individual adjustment of the pot life also enables the products to be integrated into existing and planned production processes.

Polybutadienes for flush door handles

With flush exterior door handles in particular, the potting pockets are often narrower than with classic designs due to the specific component geometries. Thanks to their special formulation, Wevo's polybutadienes ensure that electrical and electronic components are reliably protected against ambient conditions during their entire lifetime even in these use cases.

In addition to vehicle access systems, Wevo's customised polybutadiene materials can also be adjusted for other applications in vehicles where safety and reliability are particularly important. These include, for example, the proximity sensors (lidar and radar) for emergency braking assistants, adaptive cruise control or parking assistants, as well as NFC chips and LTE antennas. As regards TPMS sensors for tyre-pressure monitoring systems fitted to cars and commercial vehicles (CVs), Wevo also has customisable solutions in its portfolio that have already been successfully tested for series use.

Image description and source

Automatically deploying, flush door handles require specially adjusted materials for the sensors and antennas installed (Image source: © Bayu – stock.adobe.com).

About Wevo

WEVO-CHEMIE GMBH is an international, independent, family-run chemicals company headquartered in Germany and with further companies in Asia, China and the USA. Wevo develops and manufactures innovative potting applications as well as special bonding and sealing applications based on polyurethane, epoxy and silicone – primarily for applications in electrical and electronic components. Wevo products protect sensitive components against chemicals, vibration, foreign bodies, dust, moisture and high temperatures.

Press information

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