

LSR silicone for reliable sealing of high-voltage battery housings

Ostfildern-Kemnat, Germany. With the GB 38031-2025 standard, China is setting new benchmarks for the overall safety of high-voltage batteries. From July 2026, battery systems must be designed and manufactured in such a way as to protect vehicle passengers and emergency services personnel in the event of a thermal runaway even more effectively. A key factor in this respect is the reliable sealing of the battery housing. With its LSR silicone WEVOSIL 23130, WEVO-CHEMIE GmbH offers a material solution for FIPG sealing systems that is specifically tailored to meet these requirements. It provides, among other things, high adhesive strength and outstanding mechanical properties. Moreover, adapted processing properties are key to ensuring reliable automated battery production.

In the event of a thermal runaway, high-voltage battery systems can, among other things, generate corrosive gases, high temperatures and significant pressure within a short space of time. Safety-critical components must be designed to withstand all these effects. The same also applies to the sealing of the battery pack, which is typically achieved via the battery housing's sealing system. With the tightening of safety requirements, this interface is increasingly becoming a focus of attention.

Wevo's newly developed liquid silicone rubber (LSR) ensures the housing remains airtight by forming a reliable barrier against any gases and smoke that may be released. At the same time, the material is highly resistant to both mechanical and thermal stress. WEVOSIL 23130 therefore plays a decisive role in meeting the requirements set out in the standard.

Adhesive LSR silicone for FIPG sealing systems

As a liquid silicone, WEVOSIL 23130 can be applied using the formed-in-place gasket (FIPG) procedure. Compared to cured-in-place gaskets (CIPGs), the chemical adhesion on both sides enables a significantly more robust bond between the sealing material and the standard substrates used for battery housings and cable glands.

The high adhesive strength of Wevo LSR further enhances this effect: with more than 2 MPa (megapascals), the silicone achieves significantly higher results than many standard materials. It also effectively prevents any ingress of moisture.

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Resistance to hot battery gases

WEVOSIL 23130 provides a high level of thermal and chemical stability, ensuring resistance to hot and corrosive battery gases. Excellent mechanical properties make sure that the seal retains its integrity – even when gas pressure inside the housing is high – without any critical decomposition products being formed.

Reliable processing in automated battery production

In addition to their performance during battery operation, sealing materials also need to meet the strict requirements of automated battery production. Its filler-free formulation gives Wevo's LSR silicone excellent rheological properties, allowing it to be precisely applied using standard mixing and dosing systems as well as static mixers – even on complex 3D geometries.

In addition, WEVOSIL 23130 combines a long pot life at room temperature (> 24 hours) with precisely controllable heat curing characteristics. After application, for example, localised IR (infrared) heating up to 140 °C can ensure rapid initial curing (< 5 minutes) and adhesion. Simultaneously, there is sufficient processing time to seal large EV battery housings or to allow for any production downtime.

RTV silicones for various applications in high-voltage batteries

Apart from LSR silicones for reliably sealing EV battery housings, Wevo's RTV-2 silicone portfolio includes potting compounds for the thermal management of battery components, structural adhesives for mechanically stable bonds between battery cells and housing, and gap fillers for thermal decoupling and the mitigation of thermal runaway as well as silicone gels for protecting electronic assemblies. All these factors help manufacturers of battery systems to develop safe, durable and powerful high-voltage batteries for electric vehicles.

Image description and source

As an LSR silicone, WEVOSIL 23130 supports reliable sealing of high-voltage battery housings (Image source: © WEVO-CHEMIE GmbH).

(Please note that the image may only be used in the context of this press information).

Press information

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About Wevo

WEVO-CHEMIE GmbH is an independent manufacturer in the field of customised potting and casting compounds as well as adhesives and sealants based on polyurethane, epoxy and silicone – primarily for use with electronics and electrical engineering. Wevo products protect sensitive components against chemicals, vibration, foreign matter, dust, humidity and high temperatures. We supply to more than 1,250 customers in over 50 countries from our headquarters near Stuttgart, Germany, and through companies in Asia, China and the USA.

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