Press information

25 February 2026

2K silicone potting compounds for power electronics in EVs

Ostfildern-Kemnat, Germany. Modern power electronics in electric vehicles need to withstand not only continuous currents, but also thermal and mechanical loads. At the same time, component designs are becoming increasingly compact. Materials precisely tailored to component and customer requirements are therefore necessary for reliable operation and long-term durability. The WEVOSIL 2210x FL product range from WEVO-CHEMIE GmbH has been specifically developed to meet these stringent demands. RTV silicones provide customised protection, different levels of thermal conductivities and excellent temperature resistance. The materials thus enable thermal management, electrical insulation and mechanical stability in DC/DC converters, inverters and inductive components.

The progressive electrification of vehicle functions is leading to high levels of integration in power electronics assemblies. Inverters, DC/DC converters and inductive components are becoming more closely integrated in terms of design, while at the same time power densities and heat losses are increasing. These factors significantly heighten the demands placed on the interaction between heat dissipation, electrical insulation and mechanical decoupling, which is precisely where the WEVOSIL 2210x FL range of 2K silicone potting compounds can help: They enable the secure integration of sensitive components, improve heat dissipation and enhance long-term mechanical and electrical stability.

The following use cases highlight typical applications of these compounds in automotive power electronics:

Silicone potting for DC/DC converters

DC/DC converters perform key tasks in the high-voltage and onboard electrical architecture of EVs and must reliably transmit large amounts of power within compact designs. A suitable silicone potting compound for electronics is crucial for operational reliability.

When it comes to efficient thermal management, WEVOSIL 22102 FL is a thermally conductive silicone with 1.0 W/m·K that offers excellent heat dissipation with moderate density and highly effective mechanical decoupling. Depending on the design requirements, applications that focus on weight reduction or above-average heat dissipation can also be implemented – such as for the use of

electronic components required to function reliably despite high continuous currents, elevated ambient temperatures or limited cooling surfaces.

In addition to densely assembled components, windings and transformers, the product range also reliably protect sensitive capacitors. For example, the hydrophobic silicone potting compounds prevent moisture from penetrating and causing condensation or corrosion.

Inverters in EV drive systems – with RTV silicones

As essential components of the electric drivetrain, inverters are permanently exposed to high thermal loads. Wevo's electronic potting compounds support targeted hotspot management and help to ensure the long-term stability of high-performance components.

The potting material therefore needs to have excellent flow properties in order to fully wet the sensitive components, despite minimal gaps and densely packed power modules. WEVOSIL 22105 FL is particularly well suited to meeting these specifications, effectively combining the necessary very low viscosity with high thermal conductivity of 1.5 W/m·K.

The heat-resistant silicone is designed for continuous operating temperatures of up to 200°C. With its low hardness of around 60 Shore 00, the material offers a supersoft consistency as well as adhesion bonding. This reduces stress on solder joints, substrates and sensitive semiconductors – a key factor in the longevity of state-of-the-art electric axles.

Potting compounds for ferrite cores and inductive components

Ferrite cores are particularly sensitive to mechanical stress and also need to operate with electromagnetic stability.

Silicone potting reliably protects these brittle components from cracking and reduces vibrations as well as acoustic effects. With standard viscosities of less than 5,000 mPa·s, Wevo's RTV silicones can be reliably processed using all types of conventional mixing and dosing equipment. Air pockets are also minimised, with a corresponding positive effect on the EMC stability of potted assemblies. These materials are also suitable for demanding inductive applications such as chokes for electric vehicle components.

Individual adaptation of the materials

With the application-oriented design of its WEVOSIL 2210x FL product range, Wevo supports OEMs and suppliers in the development of cutting-edge power electronics components. On request, the materials can also be adapted to meet individual requirements.

Image description and source

Power electronics in electric vehicles place high thermal and mechanical demands on 2K silicone potting compounds (Image source: © VITALII – stock.adobe.com, AI generated).
(Please note that the image may only be used in the context of this press information).

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.

Press contact

Alexandra Heißenbüttel
Dr. Neidlinger Consulting GmbH
Phone: +49 711 167 61 712
Email: press@wevo-chemie.com