Press release

August 7, 2025

Wacker Chemie AG
Corporate Communications
Gisela-Stein-Straße 1
81671 Munich, Germany
www.wacker.com

K 2025 trade fair for plastics & rubber: New silicone rubber increases safety of traction batteries in electric cars

- Silicone rubber insulates busbars of traction batteries and reliably prevents leakage currents and energy losses
- Extrudable product enables cost-efficient insulation of components
- In the event of a fire, silicone elastomer forms an electrically insulating ceramic shell that prevents short circuits
- Improved passenger and fire safety of electric vehicles

Munich – At the K 2025 International Trade Fair for Plastics and Rubber, WACKER is all set to unveil a new silicone rubber that reliably insulates busbars in high-voltage batteries of electric cars. As it can be processed by extrusion, the new product called ELASTOSIL® R 531/60 makes the sheathing of such components very cost-effective. What is more, in the event of fire the product ceramifies and forms an electrically insulating protective layer that reliably prevents short circuits. ELASTOSIL® R 531/60 thus plays a vital role in passenger and fire safety of electric vehicles. K 2025 will be held in Düsseldorf, Germany, from October 8 to 15.

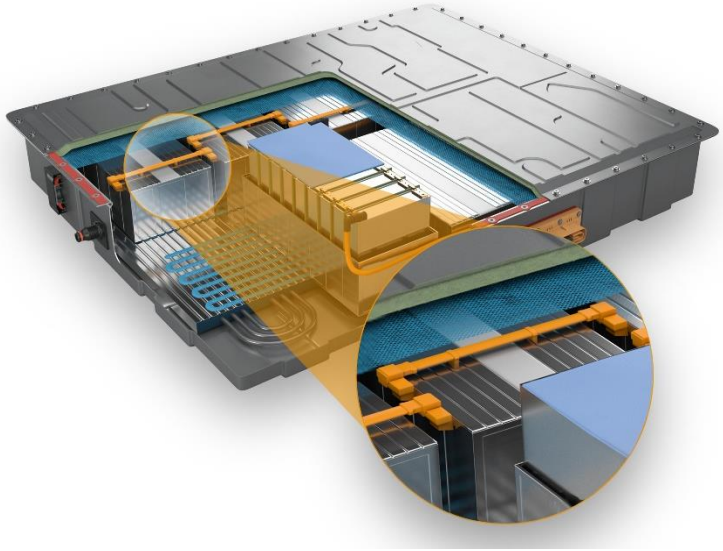
400 volts, 800 volts, 915 volts: the voltage range in electric cars seems to be heading in only one direction – upwards. However, the quest for more power, shorter charging times and longer ranges comes at a price: namely, significantly greater demands in terms of wiring and insulating electrical components. This applies in particular to busbars of traction batteries, which basically are aluminum or copper rails that distribute the current between the battery cells and modules.

As nominal battery voltages in electric vehicles are already in the range of 300 V to 900 V, the reliable insulation of these components is a must.

WACKER's new silicone rubber ELASTOSIL® R 531/60 meets these demands perfectly. The product is flame-resistant and reliably prevents leakage currents and energy losses. The insulation remains intact, even at operating temperatures of up to 205 °C. ELASTOSIL® R 531/60 has yet another important role in the safe operation of electric vehicles. In the event of a fire, the cured rubber forms a solid ceramic material that sheaths the busbar and continues to insulate it electrically, thus reliably preventing short circuits. This protective layer remains intact even at temperatures between 800 and 1000 °C.

With a hardness of 60 Shore A, ELASTOSIL® R 531/60 makes processing cost-effective as it can be applied to a busbar by extrusion. The high flexibility and tear strength of the silicone allow busbars to be bent and adapted to the surface structures of the battery without cracking. No fractures or cracks occur even after impact tests. ELASTOSIL® R 531/60 can easily withstand temperature fluctuations and is extremely flexible, even at temperatures down to 40 °C, protecting the battery from vehicle body vibrations and impacts.

Visit WACKER at K 2025 from October 8 to 15, in Hall 6, Booth A10.



Interior view of a traction battery in an electric vehicle. The enlarged section shows the busbar (orange) insulated with ELASTOSIL® R 531/60. It is bent and fit into the battery architecture after sheathing. Thanks to its high elasticity and notch impact strength, the silicone can easily cope with this molding and bending process. (Graphic: WACKER)

Busbar insulated with ELASTOSIL® R 531/60 (orange). The new silicone rubber ceramifies in the event of a fire. As a result, the rails remain insulated even in the event of an accident or vehicle fire. This provides additional protection to passengers of electric vehicles and rescue workers. (Photo: WACKER)

Please note: These photos are available for download at http://www.wacker.com/pressreleases

---

Additional information:

Florian Degenhart
Media Relations
Tel. +49 89 6279-1601
Florian.Degenhart@wacker.com

The company in brief:
WACKER is a global company with state-of-the-art specialty chemical products found in countless everyday items, ranging from tile adhesives to computer chips. The company has a global network of 27 production sites, 21 technical competence centers and 46 sales offices. With around 16,600 employees, WACKER generated annual sales of around €5.7 billion in fiscal 2024.

WACKER operates through four business divisions. The Silicones and Polymers chemical divisions supply products (silicones, polymeric binders) for the automotive, construction, chemical, consumer goods and medical technology industries. Biosolutions, the life sciences division, specializes in bioengineered products such as biopharmaceuticals and food additives. Polysilicon produces hyperpure polysilicon for the semiconductor and photovoltaic industries.

www.wacker.com Follow us on
