



Press Release

April 11, 2019

Battery Show 2019: Seamless solutions across the entire value chain of battery manufacturing

Henkel launches new silicone-free gap filler for electric vehicles

Düsseldorf, Germany – During the Battery Show 2019 in Stuttgart, Henkel will launch new technologies that enable cost-efficient large-scale assembly and lifetime protection of battery architectures. As all major automotive OEMs and new players are rapidly launching new electric vehicle (EV) models, Henkel is leveraging its broad technology base and many years of expertise and experience to drive the transformation from traditional engines to electrified powertrains. Tap into the Henkel know-how and visit the expert team at booth 1025 from May 7 to 9.

Henkel has identified three major challenges for battery manufacturers: cost-efficient processes and technologies allowing high-speed assembly of cells; ensuring reliable thermal management for operational safety and meeting the UL94 flammability standard; and allowing serviceability of battery packs. With a comprehensive range of technologies and deep know-how tailored to solving these new challenges, Henkel has set its mind on becoming the industry's leading full-solutions partner, supporting its customers from design to integration. Frank Kerstan, Director e-Mobility & Powertrain at Henkel: "We are determined to support our customers with application and process expertise, which we will highlight during the Battery Show in Stuttgart".

As shown in figure 1, Henkel's solutions and services are focused on eight integrated key technologies that combine existing with new solutions. Some notable examples include:

- **Battery assembly adhesives:**

Henkel offers multiple adhesives that are especially suitable for large scale assemblies of hundreds and thousands of battery cells by UV curing in less than 15 seconds. Whether the battery design is done with cylindrical, pouch or



LOCTITE BONDERITE TECHNOMELT TEROSON AQUENCE Ceresit



prismatic cells, Henkel technologies enable these various battery architectures.

- **Thermal interface materials (TIM) – thermal gap filler and thermal adhesives:**

To ensure safe and efficient thermal management of the battery cells and modules, Henkel has a broad portfolio of TIM products, including silicone-free Bergquist Gap Fillers. During the show, Henkel will launch a line of silicone-free, automation-friendly liquid gap fillers, with the debut product offering a thermal conductivity of 3.0 W/m-K. Furthermore, Henkel offers *Gap Pad* and *Sil Pad* materials for batteries, as well as thermal adhesive solutions which provide structural shear strength of >10 MPa, allowing different coefficients of thermal expansion to be overcome through high elongation.

- **Liquid gasketing:**

For the protection of the battery packing housing against leakages, Henkel provides different liquid gasketing technologies that are applied by automated robot. For serviceability or repair, these technologies also allow the top cover of the pack to be reopened. An additional benefit stems from their flame-retardant properties and compliance with UL94.

- **Loctite high-reliability solder pastes:**

Strong, high-integrity electrical interconnects within various control boards for battery management systems are essential for lifetime functional reliability. Henkel's award-winning line of temperature stable, Loctite GC solder paste materials will be on show, alongside the company's high-reliability 90iSC alloy, designed in cooperation with automotive industry leaders.

- **Loctite high temperature-compatible underfill:**

Newly-developed Loctite Eccobond UF 1173 device-protecting underfill has been designed specifically for high operating temperature, high reliability applications within automotive systems. The material has been formulated with health and safety top-of-mind; it contains no reportable REACH SVHCs* (substances of very high concern) and is not CMR classified.

As part of the Battery Show, customers can engage with Henkel representatives during the following events:



LOCTITE BONDERITE TECHNOMELT TEROSON AQUENCE Ceresit



- **Pre-conference workshop:** The “Specifying Thermal Management Solutions to Optimize Battery Safety and Performance” workshop on May 6 will be moderated by Henkel Asia-Pacific Head of Automotive Electronics & Global Market Segment Head for e-Mobility, Pankaj Arora, and includes presentations from numerous industry thought leaders. See the full program and register here:
<http://www.thebatteryshow.eu/conference/agenda?conf-view=full&day=workshops>
- **Live product demonstration:** At Henkel booth 1025, Henkel Technical Service Manager, Nicolas Riem, will show the effectiveness of the new Bergquist silicone-free liquid Gap Filler TIM, designed for high-throughput production, low assembly stress and excellent thermal control. Live demonstrations will take place on May 8 at 13:30.

Backed by strong application know-how, R&D test centres around the world and strong strategic alliances (e.g. with RLE International), Henkel is in the unique position to be a partner for its customers’ engineering teams. As such, the company is driving the future of e-Mobility by enabling the industry to solve its significant electrification challenges and is looking forward to engaging with customers during the event.

**As per current, June 2018 REACH SVHC documentation.*



LOCTITE BONDERITE TECHNOMELT TEROSON AQUENCE Ceresit



About Henkel

Henkel operates globally with a well-balanced and diversified portfolio. The company holds leading positions with its three business units in both industrial and consumer businesses thanks to strong brands, innovations and technologies. Henkel Adhesive Technologies is the global leader in the adhesives market – across all industry segments worldwide. In its Laundry & Home Care and Beauty Care businesses, Henkel holds leading positions in many markets and categories around the world. Founded in 1876, Henkel looks back on more than 140 years of success. In 2018, Henkel reported sales of around 20 billion euros and adjusted operating profit of around 3.5 billion euros. Henkel employs around 53,000 people globally – a passionate and highly diverse team, united by a strong company culture, a common purpose to create sustainable value, and shared values. As a recognized leader in sustainability, Henkel holds top positions in many international indices and rankings. Henkel's preferred shares are listed in the German stock index DAX. For more information, please visit www.henkel.com.

Photo material is available at <http://www.henkel.com/press>

Contact

Henkel Adhesive Electronics
Eszter Marai
+49 211 797 7168
electronics@henkel.com



LOCTITE BONDERITE TECHNOMELT TEROSON AQUENCE Ceresit

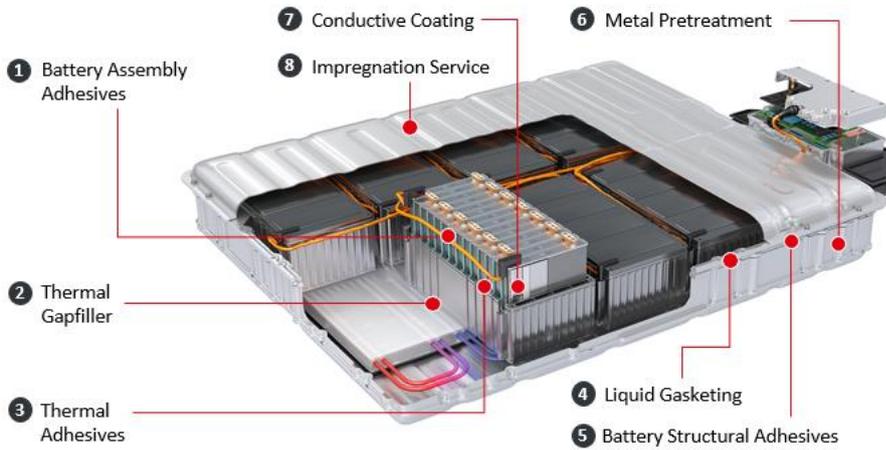


Figure 1

Henkel provides a comprehensive technology portfolio and application know-how for efficient assembly, operational safety and lifetime protection of battery cells, modules and pack.

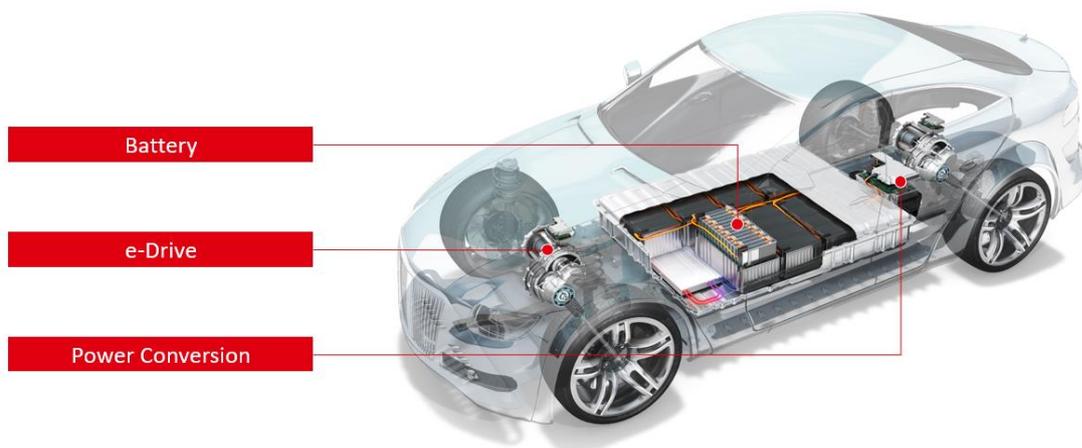


Figure 2

Henkel enables e-Mobility with different matching technologies for battery systems, e-Drive systems and power conversion components of electric vehicles.