Henkel

Henkel Adhesive Technologies

APPLICATION *USE CASE*

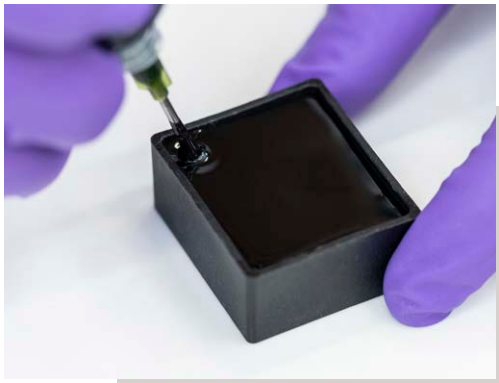
Building Durability into EV Charging Connectors

Market Situation

- Electric vehicle (EV) charger connectors for all levels of charging devices are inserted into and pulled from onboard EV ports numerous times a day.
- As the conduit for supplying charging power to the EV battery system, reliable performance and durable construction of the connectors are prerequisites.
- Central to the overall EV charging experience, rugged dependability of the charger connector helps secure cost-competitiveness, lifetime performance and consumer confidence.

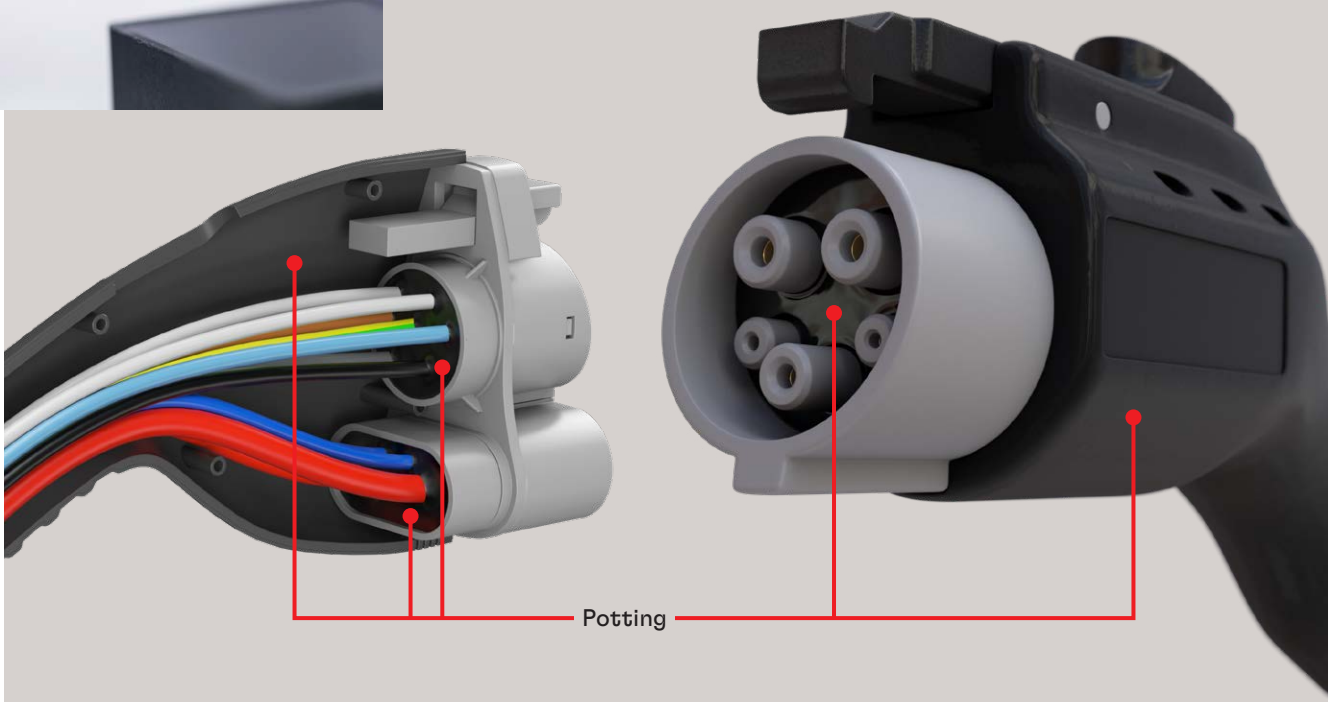
Application Challenges

- To protect and strengthen the connector assembly, potting material is dispensed inside the charger handle, covering and encapsulating all of the cables and components, and adhering to the interior of the case. Strong adhesion to all surfaces – plastics, wire and component coatings – is essential.
- To accommodate high-volume production speeds, the potting material should dispense and cure quickly, with no leakage so as to ensure ample material for protection of interior components. Balancing material viscosity with lower gel times is advantageous.
- UL 94 flammability certification for defense against fire from high thermal loads, as well as moisture and dust resistance for ingress protection, are key to meeting charger performance expectations.



Solutions

- Henkel's portfolio of UL-rated potting materials offers a range of formulations with different chemistry platforms, cure schedules and flexible pot life timelines. Proven in numerous applications, these materials are well-suited for the demands of EV charging connectors.
- Recent testing of a next-generation potting solution within a charging connector application revealed excellent results, including: strong adhesion to all surfaces, fast dispense and cure times, ruggedness and resistance up to 600 kg of vehicle pressure for accidental rollovers, UL 94 flammability compliance and stability during manufacture with no leaking.
- Henkel potting materials offer protection from mechanical damage, moisture ingression, vibration and rough handling and are a key element of driving lower cost, higher performance charging solutions for the growing EV market.



APPLICATION USE CASE
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Relevant Links

Learn more about Henkel's solution portfolio for EV Charging Infrastructure.

Watch a video – EV Charging Infrastructure – Solutions Overview.

Read an article – Gearing Up for the EV Road Ahead.

Application Use Case – Controlling Thermal Conditions for DC Fast Charging Reliability.

Application Use Case – Protecting Electronics in EV Charging Devices.

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