CUSTOMER USE CASE

LOCTITE®

LOCTITE® TLB 9300 APSi

Two-component polyurethane thermally conductive adhesive for EV battery systems.

1 CUSTOMER CHALLENGES

- A major global EV battery manufacturer required an injectable thermally conductive adhesive solution that allows for bonding cell stacks into the battery module
- A high thermal conductivity of 3 W/mK was required to ensure efficient heat dissipation from the battery cells to the cooling system
- A high lap shear strength to Aluminum and PET foil was also a key requirement to ensure the structural integrity of the battery cells and module

2 HENKEL SOLUTION

- Henkel developed a two-component polyurethane thermally conductive adhesive: LOCTITE® TLB 9300 APSi
- The product has a moderate viscosity to fill cavities in pre-assembled modules, with fast curing at room temperature
- The product has an optimal filler load and provides a thermal conductivity of 3 W/mK, allowing ample heat dissipation along with strong bonding performance

3 MASS PRODUCTION PROCESS SET-UP

- Henkel's E-Mobility experts provided the customer's teams with close technical and on-site engineering support, helping them scale up quickly and efficiently with the new solution
- The solution enables the customer to produce >10.000 battery modules a day on several production lines
- Through trustful collaboration with the customer and the dispensing equipment supplier, Henkel ensured the successful implementation of the complex and multifunctional process solution (material and dispensing equipment) successfully meeting all the customer requirements

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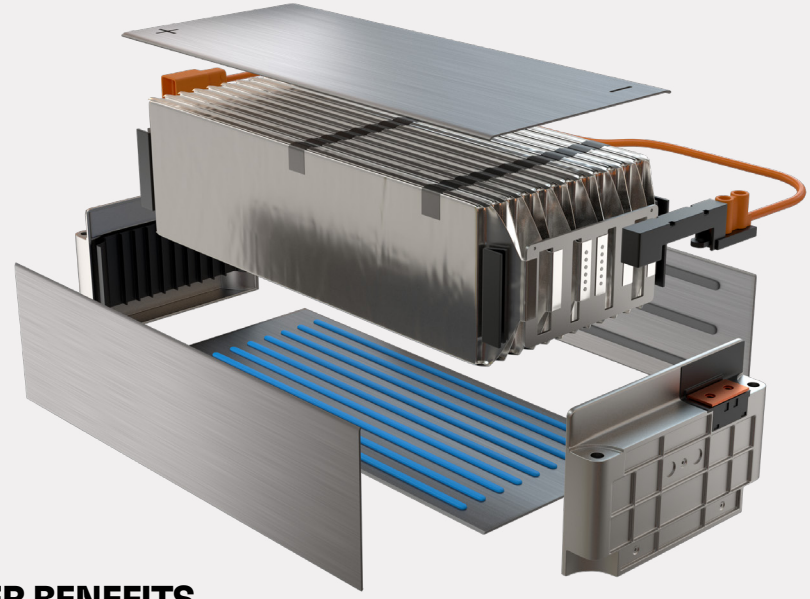

CUSTOMER BENEFITS

- **High Thermal Conductivity of 3 W/mK**
- **High Lap Shear Strength and suitability for multiple substrates**
- **Fast room temperature curing**
- **Injectable application**
- **Continuous throughput due to fast cure kinetics**