

Sealing the deal on EV battery assembly

We'll help you optimize your EV battery enclosure sealing while enabling automation and enhancing serviceability.

Battery enclosure sealing is the linchpin of modern electric vehicle battery assembly. Unfortunately, many battery sealants are suboptimal for automation and limit disassembly and serviceability options.

See how you can enable automation and enhance battery serviceability with an advanced battery enclosure sealant from 3M. Our experts will collaborate bench-to-bench to help you optimize throughput and achieve your key EV battery assembly requirements.

The importance of EV battery enclosure sealing

In recent years, electric vehicles have gone from science fiction to everyday reality for many consumers. Innovations in cell-to-pack and cell-to-chassis structural pack designs are increasing energy densities and battery ranges while reducing design redundancies and controlling production costs. But despite these advancements, one element remains constant: the importance of effective and reliable EV battery enclosure sealant materials.

EV battery enclosure sealing is needed to provide protection to cells and other electrical components from water ingress. In today's compact, high-energy-density designs, even small amounts of moisture can cause electrical shorting and lead to battery damage or failure. Balancing battery enclosure sealant strength and durability with requirements for automated assembly, easy disassembly and serviceability is a fundamental challenge of modern EV battery design.



Optimizing battery sealing through bench-to-bench collaboration

Based on extensive customer feedback received by 3M, several key requirements of an effective EV battery sealant have been identified. Helping boost throughput while enabling automation is essential, and serviceability is critical given that conventional sealants (structural adhesives, foam-in-place gasket sealants) are difficult to disassemble and limit servicing options. Long term durability, compression resistance and flame resistance are all additional requirements cited by a wide range of OEM customers.

You can achieve robust, durable sealing, cure-in-place capabilities and serviceability in your EV battery assembly with 3M™ Sealant SZ1000 for EV Enclosure Sealing.

Our battery experts have worked bench-to-bench with numerous OEM customers to help optimize throughput, automation and serviceability requirements. 3M can further support the automation process by collaborating closely with Tier suppliers managing the deck lid production, as well as with dispensing partners across the globe.

Additional product details

3M™ Sealant SZ1000 for EV Enclosure Sealing is a two-part, cure-in-place, flame retardant, foam, sealing solution designed for sealing battery packs and other enclosures in electric and hybrid vehicles. It can be dispensed automatically and provides robust sealing to help protect EV batteries against water ingress. It features good long term durability and a low compression set of <15%, as well as a resealable gasket to streamline disassembly and help enable battery serviceability.

For more information, please see the [Product Detail Page](#) and [Technical Data Sheet](#).

New sealant in development

3M is developing a novel CIPG solution for EV battery assembly that cures rapidly at room temperature. It has potential to help EV OEMs reduce cycle times and handle the high throughput requirements of the new battery megafactories being planned globally. Please contact the 3M Automotive team to learn more.

Standards and requirements

3M™ Sealant SZ1000 is rated to specification IPX8 for water protection according to IEC 60529. Compression set was evaluated according to EN ISO 1856.

It is flame retardant in vertical burning tests.

We'll help you drive the future of eMobility.

To learn more visit [3M.com/evbattery](https://www.3m.com/evbattery).

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