



Solutions for the **ELECTRIC VEHICLE MARKET**

The lithium-ion batteries that are powering the advances in the electrification of transportation require innovative components. **Marian manufactures custom die-cut parts for applications within the entire battery, including the cell, module, and pack.** Marian solutions can help designers address battery safety, durability, reliability and weight. With ISO 9001:2015 and IATF 16949:2016 certifications, Marian's quality management systems are set up to meet the stringent standards of the transportation industry. Marian provides rapid turnaround on material samples and prototypes while also offering design assistance and collaboration.

Solutions for ELECTRIC VEHICLE BATTERY

1 THERMAL INTERFACE MATERIALS

Effective thermal management is essential to optimizing battery performance and longevity.

- Thermal interface gap pads, heat spreaders, tapes
- Key TIM suppliers: 3M™, Polymer Science

2 SEALS & GASKETS

Custom gaskets and seals provide long-term sealing in extreme temperatures & conditions.

- Rogers BISCO® silicone foams, PORON® urethane foams, 3M™ VHB™

3 DIELECTRIC BARRIERS & INSULATORS

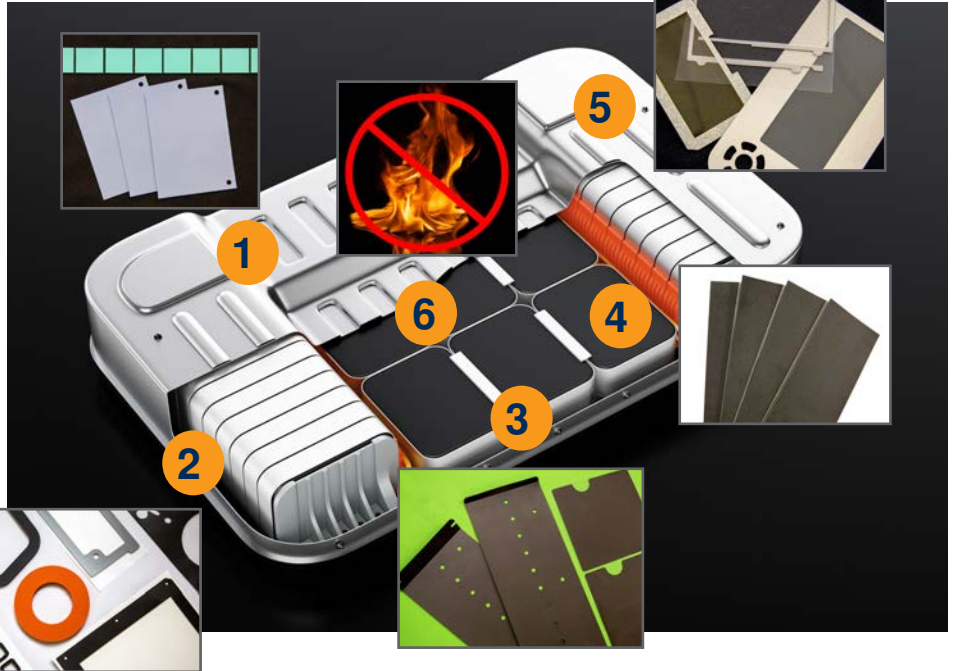
Dielectric barriers and insulators meet rigorous standards to keep the battery running safely.

- ITW Formex®, Lexan™ films, Kapton® Polyimide films, 3M™ EMI/EMC materials
- 3M™ flame barrier materials

6 ANTI-PROPAGATION

Extremely high temperature resistant materials for thermal runaway mitigation

- Films, fibrous papers, and felts
- Intumescent foams
- Composites
- Additional constructions



4 SPACERS & COMPRESSION PADS

Foam pads maintain compression as the battery cell expands and contracts. Foam also protects battery components against shock and vibration.

- Precision die-cut foam pads
- Rogers PORON® EVExtend foam materials, Rogers BISCO® silicone foams

5 EMI SHIELDING COMPONENTS

Protect the battery management system and other electronics within the vehicle from EMI.

- Conductive elastomers, foams, foils, tapes
- Key EMI/EMC material suppliers: 3M™, Rogers, Polymer Science

MATERIAL SUPPLIERS

The experts at Marian are an invaluable resource during material selection and evaluation. Marian has preferred status among most of the world's top material suppliers of thin flexible materials.



A global leader in providing precision die-cut component parts for customers across many markets all over the world. All facilities certified to ISO 9001:2015.

1.800.773.0062 | www.marianinc.com

