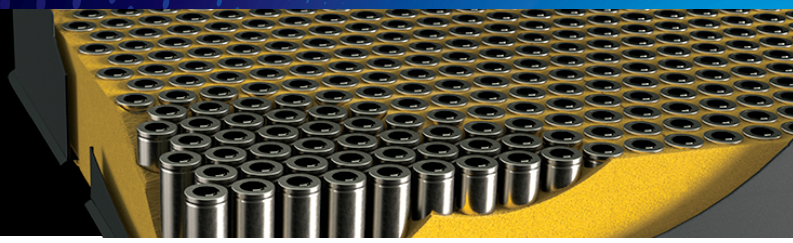
H.B. Fuller
Engineering Adhesives

tewipack klebetechnik

# Electric Vehicle Batteries

## EV Protect

**LIGHTWEIGHT, FIRE RETARDANT, POLYURETHANE FOAM ENCAPSULANT**



### EV PROTECT 4006 SFRE

**PRODUCT + PROCESS PATENTED**
EP3753056 B1 + EP3855561 A1

PATENTED

EV Protect 4006 SFR E is a liquid applied, two-component, flame retardant, low density, polyurethane, foam material designed for potting and encapsulation of battery cells in EV battery modules. The ultra-lightweight nature of the EV Protect 4006 SFR E minimizes thermal propagation and the weight impact to the battery modules. The semi-structural properties of the material also provide noise, vibration, and harshness benefits to the battery system by unitizing the battery module and absorbing external environmental impacts.

### EV PROTECT 5006

**PRODUCT + PROCESS PATENTED**
EP3753056 B1 + EP3855561 A1

PATENTED

The next generation of our ultra-lightweight, fire retardant, protective encapsulant. Our EV Protect 5006 offers battery designers the ability to integrate high-level structural performance characteristics into their battery system which is ideal for cell to pack applications. The EVP 5006 maintains many of the key benefits of the previous generation technology, however, with reduced viscosity and improved curing speed, it is especially advantageous for unique, complex, or intricate battery design architecture.

### EV PROTECT 300

The EV Protect 300 is a two-component, low viscosity, polyurethane, potting and encapsulating system. It is designed to encapsulate battery cells in battery modules and can also be used in other potting applications where flame retardancy is desired. This fast-curing product also meetings UL94 Flammability requirements and Plastic Materials Vertical Burn Test Rating V-0.

### KEY BENEFITS FOR EV PROTECT 4006 SFR E & EV PROTECT 5006

- Fire protection
- Lightweight
- Processability
- Noise and vibration absorption
- Cost effective
- Impact resistant
- Adhesion to multi-materials
- Insulative to environmental extremes
- Reduced volume/consumption
- Non-corrosive

### KEY BENEFITS

- Flame retardancy
- Low mix viscosity
- Soft and flexible
- Fast curing

## EV Seal

**BATTERY PACK GASKET SEALANTS**

### EV SEAL 500 E

EV Seal 500 E provides a resealable, recyclable, and cost effective solution that the EV industry has been looking for in a gasket. This one part compressible gasket is designed for battery pack enclosures in which repeatable accessing of the pack is desired. With EV Seal 500 E, opening and closing of the enclosure without degradation in the sealing performance is achieved.

### KEY BENEFITS

- Resealable
- Meets IP67 requirements
- Robotically applied < 200°C with fast cycle times
- Good aging/weatherability
- Good compression set resistance
- Temp range in operation -40°C to 85°C

### SV SEAL 1059

SV Seal 1059 is a high performance hot applied thermoplastic butyl material with superior sealing properties. The product is proven to be an effective sealing (IP 67+), also resisting contact to all relevant automotive typical liquids.. The application can be easily automized. It gives a secure seal that helps protect against water penetration and prevents corrosion and moisture damage.

### KEY BENEFITS

- Excellent sealing >IP67
- Good aging/weatherability
- Good chemical resistance
- Proven reliability in automotive gasketing
- Temp range in operation -40°C - +90 °C

### EV SEAL 200

EV Seal 200 is a high quality, elastomeric single or double component adhesive/sealant based on MS-Polymer. This moisture cure technology offers good compromise between an adhesive and a sealant by creating a strong bond and seal for battery pack enclosures. EV Seal 200 is suitable for a permanent seal and provides high strength for form in place gaskets (FIPG).

### KEY BENEFITS

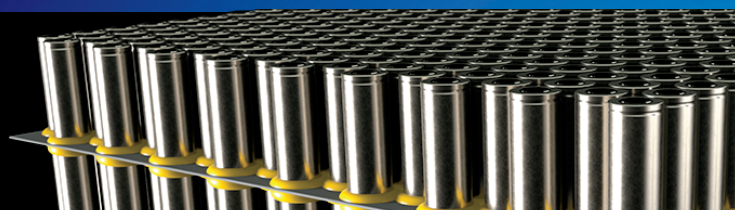
- Wide temperature range
- Excellent sealing > IP67
- High chemical resistance
- Robotically applied with primerless adhesion on many substrates
- Good aging/weatherability

## Plug into our EV Adhesive Technology

Download our app to learn more

# EV Therm

**THERMAL MANAGEMENT ADHESIVE TECHNOLOGIES**



## EV THERM 601

EV Therm 601 is a one-component, thermally conductive, flame retardant, electrically insulative, UV curable technology. Not only is it designed to meet UL-94 VO flammability requirements, but it also provides optimum coating at a minimum coating thickness of 150 microns and encapsulation protection for electronic assemblies and components. This material was designed to be thermally conductive and is recommended for use with heatsinks, heat spreaders, cold plate, cooling tubes, and other thermal dissipation applications.

### KEY BENEFITS

- One component system
- Low viscosity and surface tension
- Extremely low cure time
- High dielectric strength
- Superior low and high temperature cycling performance
- Adhesion to various metals and plastics without the need for primers

## EV THERM 288

EV Therm 288 is silicone free gap filler, formulated exclusively for EV battery environment. This thermal interface material cures at room temperature or accelerated with heat and provides excellent thermal conductivity, electrical insulation, water resistance, corrosion resistance and impact resistance properties.

### KEY BENEFITS

- High thermal conductivity
- Optimized assembly process; better compressibility/spreadability
- Optimized dispensability (minimize abrasion)
- Long open time and fast curing
- No crack formation after ageing

## EV THERM 300 SERIES

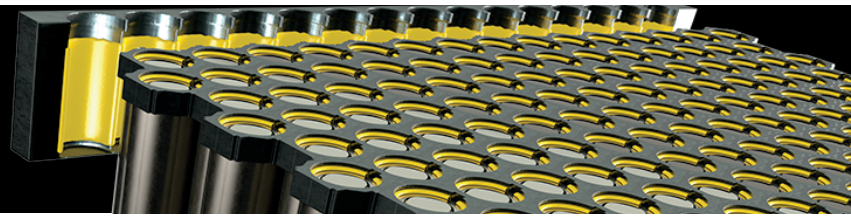
The EV Therm 300 range is a thermally conductive and structural 2K, PU-based adhesive platform with flame retardant properties. The products are available in different viscosities from liquid and self-levelling to thixotropic, pasty and non-sagging. The materials are available in different pot-life versions to fit in specific application processes.

### KEY BENEFITS

- Meets UL94 V-0 requirements
- High impact resistance
- Excellent elongation to break
- Room temperature cure
- Non-abrasive
- Excellent adhesion to multiple substrates
- Tuneable pot-life and curing speed

# EV Bond

**STRUCTURAL ADHESIVE TECHNOLOGIES**



## EV BOND 300

EV Bond 300 is a high versatile two-component polyurethane structural adhesive designed for bonding battery housing, cell to carrier, cell to cell, and cell to sidewall. It is strong, flexible and wellsuited to bonding dissimilar substrates. Adhering to a wide range of polycarbonates and plastics, the EV Bond 300 is ideal for managing CTE mismatch, shock, vibration, and impact.

### KEY BENEFITS

- High structural strength
- High viscosity non sag
- Specifically designed for Li-Ion battery
- Excellent for battery pack assembly
- Bonds wide variety of plastics & metals
- Fast cure time
- Well suited to bonding dissimilar substrates

## EV BOND 383

EV Bond 383 is thixotropic, toughened, two–component, ambient-curing epoxy adhesive. It suitable for assembly or sealing of reinforced composite structures, metal bonding or other applications where a toughened epoxy adhesive is required. EV Bond 383 is ideal for battery pack structural bonding and contains dyes which fluoresce brightly when exposure to UV inspection lamps.

### KEY BENEFITS

- Outstanding Bond Strength on AL, steel, as well as other composites
- Great elongation
- Wide open time
- High heat resistance

## EV BOND 420

EV Bond 420 is a high performance two-part acrylate adhesive engineered to bond a wide range of plastics, metals, and composite assemblies. It increases the reliability of finished assemblies with it's ability to with stand extreme temperature fluctuation, and resistance to a wide range of chemicals and environmental conditions.

### KEY BENEFITS

- Good bonding properties to many substrates
- Excellent resistance to severe environments
- Designed for demanding automotive applications
- Low odor, low exotherm, & non-flammable

IMPORTANT: The information contained herein is believed to be correct to the best of our knowledge. However the recommendations and suggestions herein are made without guarantee or representation as to results. It is the purchaser's responsibility to test and determine the suitability of the product for the purchaser's intended use and purpose. Purchaser assumes all risk and liability whatsoever regarding such suitability. Any product samples provided for testing are provided in accordance with standard limited warranties as stated on our technical data sheets.
Unless otherwise noted, trademarks are property of H.B. Fuller Company or one of its affiliated entities.
© H.B. Fuller Company, 2022