



H.B. Fuller

Engineering Adhesives

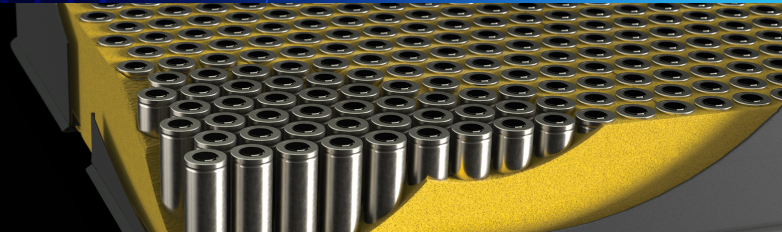


# Electric Vehicle Batteries



## EV Protect

LIGHTWEIGHT, FIRE RETARDANT,  
POLYURETHANE FOAM ENCAPSULANT



PATENTED

### EV PROTECT 4006

H.B. Fuller's EV Protect 4006 is a liquid applied, flame retardant, low density polyurethane foam encapsulant that provides fire protection in battery modules. If a cell(s) shorts, EV Protect 4006 absorbs the energy from the initial explosion(s) to prevent additional physical damage to the module and remaining cells. This is achieved due to the strong charred layer that is formed when it comes in contact with heat or flames. This prevents heat transfer to adjacent cells, protecting them from damage or failure. The prevention of fire and heat from transferring throughout the battery module is key to reducing thermal propagation. EV Protect 4006 is a proven lightweight battery pack encapsulation solution that will ensure your battery design is safe and protected.

#### KEY BENEFITS

- 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



## EV Seal

BATTERY PACK GASKET  
SEALANTS



### EV SEAL 500

EV Seal 500 provides resealability, recyclability, 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, opening and closing of the enclosure without degradation in the sealing performance is achieved.

#### KEY BENEFITS

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

### EV SEAL 662

EV Seal 662 is a fast UV cure adhesive with high depth of cure. This product is very soft and flexible and has excellent dimensional stability after dispensing. It has excellent adhesion and elasticity, and can be used as a form in place (FIPG) or cure in place (CIPG) gasket material. EV Seal 662 has excellent compressibility, rebound, recovery, and low compression set.

#### KEY BENEFITS

- One component, requires no mixing
- Fast curing
- Good adhesion to glass, many plastics and many metals
- Flexible
- Robust application feature as it cures on demand by UV radiation

### 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



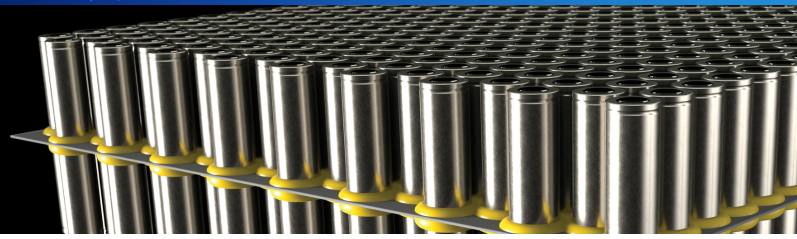
Plug into our EV Adhesive Technology

Download our app to learn more



# EV Therm

THERMAL MANAGEMENT  
ADHESIVE TECHNOLOGIES



## EV THERM 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 420

EV Therm 420 is an innovative thermally conductive structural adhesive that has excellent bond strength to a wide range of substrates and is ideal for cell to cold plate applications. This Methyl Methacrylate technology allows for fast fixture time, structural rigidity, and thermally conductive properties. EV Therm 420 is uniquely formulated to be low odor, low exotherm, non-flammable, and is UL 94 V0 rated.

### KEY BENEFITS

- High tensile, shear and peel strength
- High toughness
- High impact strength
- Good bonding properties to many different substrates
- Low Odor, low Exotherm, & non-flammable

## EV THERM 500

EV Therm 500 is a two-component, thermally conductive, flame retardant epoxy resin system. It provides optimum coating and encapsulation protection for electronic assemblies and components. It is also thermally conductive and is recommended for use with heatsinks, heat spreaders, and other thermal dissipation applications.

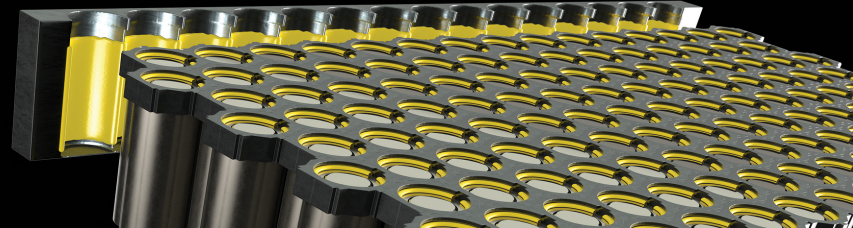
### KEY BENEFITS

- Low viscosity and surface tension
- Thermally conductive
- Adhesion to various metals and plastics without the need for primers
- Superior low and high temperature cycling performance.



# 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 well-suited 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

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

## 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.

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