

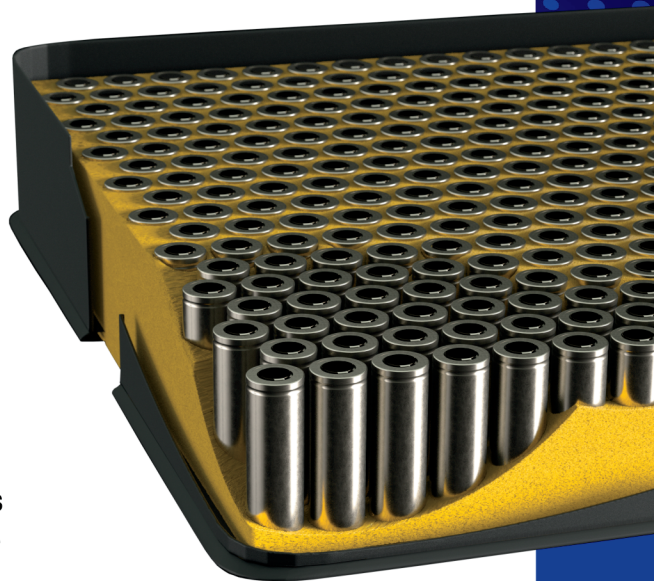


EV Protect 4006

LIGHTWEIGHT, FIRE RETARDANT, POLYURETHANE FOAM ENCAPSULANT

ABOUT 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.



GENERAL INFORMATION

EV Protect 4006 SFR is generally dispensed using a high speed dynamic mixer head directly into the battery module. The low viscosity liquid is easily able to flow and self level at the bottom of the enclosure. Once leveled, the material will foam and rise to approximately 5 times volumetric expansion. After rising, the foam will crosslink and cure creating a semi-structural interconnected foam that encapsulates all components within the module. In the event of a thermal event, the foam will absorb, isolate, and insulate the cells to mitigate thermal propagation.

Technology / Base:	Polyurethane Foam
Type of Product:	Encapsulant
Components:	Two Component
Curing:	Room Temperature Cure
Appearance / Color:	Light Amber
Consistency:	Low Viscosity Liquid

KEY BENEFITS

- Reduces Thermal Propagation
- Ultra Lightweight
- Low Viscosity & Self Leveling
- Great Vibration and Impact Resistance
- Outstanding Insulation Properties
- No outgassing of Hydrogen gas during curing
- Meets UL94 V0 Certification- flame protection/flame retardant
- Up to 5 Times Expansion Rate
- Cost Effective - Low Volume Usage
- Fast Processability



Plug into our EV Adhesive Technology

Download our app to learn more



EV Protect 4006

LIGHTWEIGHT, FIRE RETARDANT, POLYURETHANE FOAM ENCAPSULANT

BATTERY ENCAPSULATION COMPARISON

Encapsulant Properties	Epoxy Foam	Epoxy	Silicone Foam	Silicone	EV Protect PU Foam
Outgassing	●	●	●	●	●
Low Initial Viscosity cP	●	●	●	●	●
Lightweight kg/m ³	●	●	●	●	●
Flame Retardancy	●	●	●	●	●
Shock and Vibration	●	●	●	●	●
Contamination Concerns	●	●	●	●	●
Cost	●	●	●	●	●
Impact Resistance	●	●	●	●	●
Low Exotherm	●	●	●	●	●
Adhesion to Substrates	●	●	●	●	●

● Excellent ● Good ● Poor



To learn more about the latest H.B. Fuller electric vehicle solutions, call your local representative or visit us online at www.hbfuller.com/ev.

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.