



Product Data Sheet

Product Description

LithiumPrevent is a passive fire containment solution that makes lithium-ion battery systems safer by preventing thermal runaway propagation. Including LithiumPrevent in the design of an OEM's battery system is proven to achieve the industry's toughest fire safety test standards. The base material is a proprietary intumescent polymer that can be extruded or injection molded to meet application requirements.

LithiumPrevent provides fire safety solutions for problems associated with lithium-ion batteries:

- Contains thermal runaway at the cell or module level
- Provides thermal separation between cells or modules
- Controls explosive events
- Prevents cascading fire propagation
- Prevents transfer of internal heat to outside combustibles

Fire Test Standard

LithiumPrevent has successfully completed testing programs including internal testing, independent testing, and evaluations at NASA, The FAA and DNV.

UL 9540A (Fire Resistance)
ASTM E119 (Fire Resistance)

UL 94 (Flame Spread)
ASRM E 1354 (Caloric Content)

Testing Facilities

Our materials and products are tested at industry leading testing facilities to assure the highest standards including:



Lithium Prevent Features

- A durable polymer composite material
- Can be injection molded or overmolded to almost any shape or size
- Extrudable into sheets for various applications
- Electrically non-conductive
- Separation between cells or modules segregates runaway events
- Designed to manage an explosive event by venting both ejecta and gases
- Several commercially available formulations
- Excellent processability

Properties

• State	• Solid
• Colour	• White
• Specific Gravity	• 1.54g/ml
• Melting Point	• 129 °C
• Start Expansion Temperature	• 200 °C
• Expansion Rate	• 2-3x original volume

Flammability Control and Toxicity Outgassing

• Outgassing in a Vacuum Environment	• 0.03% Volatile Condensable Material	• NASA STD 6016, SP-R-0022A (ASTM E 595)
• Flammability Characteristics	• None to Small	• NASA STD 6001
• Upward Flame Propagation	• Results were less than reporting limit	• NASA STD 6001

Performance Data

• Tensile Modulus	• 137 Mpa	• ASTM D638-10
• Tensile Strength	• 18.1 Mpa	• ASTM D638-10
• Tensile Elongation at Yield	• 4%	• ASTM D638-10
• Tensile Elongation at Break	• 7.90%	• ASTM D638-10
• Flexural Modulus	• 176 Mpa	• ASTM D790-10
• Flexural Yield Stress	• 24.9 Mpa	• ASTM D790-10
• Flexural Yield Displacement	• 31.5 Mpa	• ASTM D790-10
• Dielectric Strength	• 9.5 kV/mm	• ASTM D149