FyreWrap® LiB Films

Introduction
FyreWrap® LiB (Lithium-ion Battery) Film from Unifrax is a high-temperature, lightweight flame barrier and electrically insulating material designed to increase safety in lithium-ion battery packs. Based on proprietary fire blocking technology, the film was developed as a flame barrier for applications demanding extremely lightweight materials.

FyreWrap LiB Film Features
• Fire resistant, flame barrier
• Electrically insulating
• Suitable for temperatures in excess of 1100°C
• Uniform lightweight flexible sheets
• Easy to wrap, shape or cut
• Fully heat-sealable with ultrasonic or thermal sealing equipment
• Designed for minimum moisture absorption and reduced installed weight

Film Capabilities
• Aid in thermal runaway propagation prevention
• Short circuit prevention and electrical protection
• Cascading fire prevention
• Thermal isolation and containment

Applications
• Battery Enclosures / Lids
• Aluminum, Steel, Copper, and other metals
• Composites
• Bus bars, current collectors
• Battery sub-components where high voltage electrical and fire protection are needed
• Packaging

Material Properties
• Resistant to temperatures in excess of 1100°C
• Thickness: 0.2 mm
• Basis Weight: 100-200 g/m²
• Burst Strength: > 340 kPa
• Puncture Resistance (10 mm probe): > 50 N
• Permeance: < 0.2 perms
• UL94 V-0
• ASTM E1461 Flash Method Thermal Conductivity: 0.202 (W/m-K)
• Dielectric Strength ASTM D149-09 (2013): 700-800 (volts/mil) / 20 (kV/mm)
• 60 Hz Dielectric Constant ASTM D150-11: 1.97 DC 0.0087 (DF)
• 10 kHz Dielectric Constant ASTM D150-11: 2.08 DC 0.0071 (DF)
• Arc Resistance ASTM D495-14: 14.0
• Volume and Surface Resistivity ASTM D257-14:
  — Volume Resistivity: 5.36e+14 (ohm–cm)
  — Surface Resistivity: 1.07e+11 (ohms/square cm)

Please contact Unifrax for more information on FyreWrap LiB films and coatings along with any specific design requirements.