# MK series composite insulation materials

MK-110 has passed long-term durability tests and can be cut and overlapped into any shape. It adopts a 2-layer structure, can withstand flame impacts of 1300℃ and above, and maintain a certain level of strength. The material is based on synthetic elastomers, soft and elastic, capable of conforming to curved surfaces, with vibration damping function, Suitable for thermal runaway protection of modules and battery enclosures. The product complies with RoHS, REACH, and ELV directives.

Features and advantages

- Excellent fire performance：1300℃ flame burning time > 30min.
- Excellent impact resistance, able to block flame spread when a single battery cell loses control.
- Comply with RoHS, REACH, ELV directives.
- Clear process, high feasibility for mass production, and flexibility for 360 ° coverage.

Applications
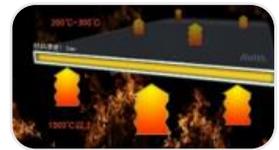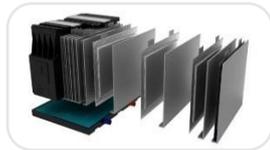
- Thermal insulation, fire resistance, and impact resistance between the battery box, module, and battery cell of new energy vehicles.
- Thermal insulation, fire resistance, and impact resistance between energy storage battery cells and modules.
- Thermal protection in the aerospace field.

Technical support and service

- Can provide finished products that have been cut and overlapped according to customer drawings.
- Testing services can be provided based on different fire scenarios and flame temperatures.

Instructions for use

- Please confirm the size of the usage environment in advance.
- As Boomrun cannot guarantee that products will be suitable for all potential applications, it is recommended that tests be conducted in a simulated product operating environment before mass production to confirm that the application requirements are met.

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MK-150 Material property parameter

Property	Unit	Typical value	Remark（Test method）
Physical characteristics			
Thickness	mm	1.5	Tolerance：±0.1mm
Density	g/cm³	1.6±0.1	GB/T 533-2008
Tensile strength	MPa	≥20	GB/T 528-2009
Hardness	Shore A	65±7	GB/T 531.1-2008
Flammability			
Flammability	--	V0	UL 94
Electrical and thermal properties			
Dielectric strength	kV/mm	≥15	GB/T 1408.1-2016
Insulation resistance	GΩ	≥1	1000V/DC，60s
Withstand voltage	mA	≤1	2700V/DC，60s
Fire resistance	min	Burn-out time ≥30	1300±200℃ Oxyacetylene flame
Thermal conductivity	W/(m·K)	≤0.5	ASTM D5470
Long-term weather resistance			
85℃×85%RH	--	Pass	85℃×85%RH×1000Hours
Alternating high and low temperature	--	Pass	The temperature shock ranges from -40℃ to 85℃. Hold for 30 minutes after each extreme temperature point is reached. The temperature transition time is based on the device's fastest time. Test equipment 500 cycles.
High temperature aging	--	Pass	120℃，1000H
Prohibited substances			
ELV	--	Pass	GB/T 30512-2014
RoHS	--	Pass	RoHS Directive 2011/65/EU & (EU)2015/863 Annex II
Reach	--	Pass	Two hundred and thirty-three (233) SVHC screening is performed according to Regulation (EC) No 1907/2006 concerning the REACH.

Notes:

1. More technical parameters can be provided；

2. The typical value is the average value of the overall performance data.For more technical specification value, please contact us.