MOBILITY

SUMITOMO RIKO's Heat Insulation for Automotive Applications

SUMITOMO RIKO

Sumitomo Riko's Energy Management Technology

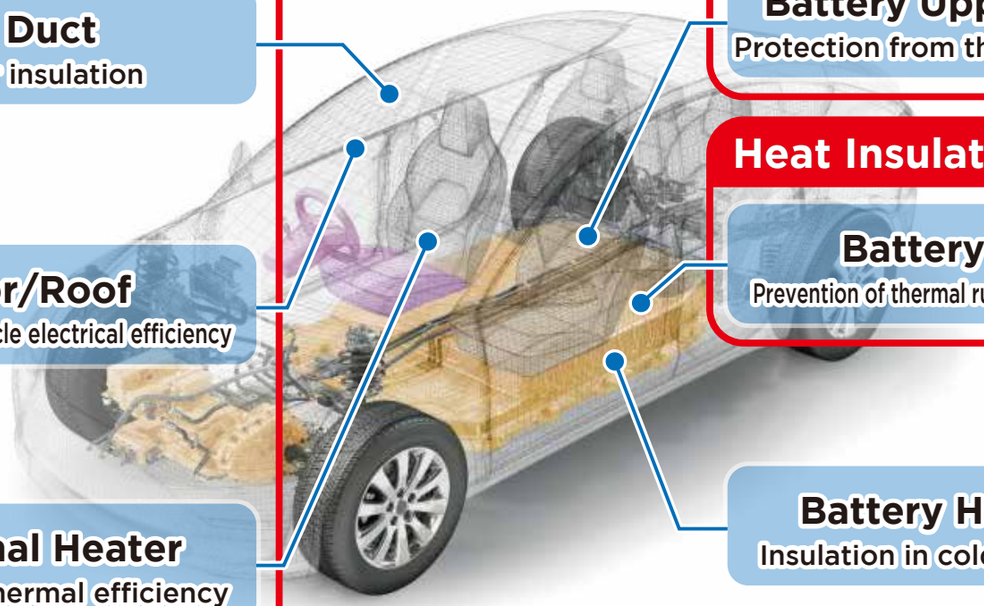
Our heat insulating material contributes to higher fuel economy for electrically-operated motor vehicles.

Heat Insulation①

Air Duct
Cold air insulation

Door/Roof
Improving vehicle electrical efficiency

Personal Heater
Improving thermal efficiency

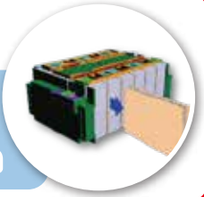


Heat Insulation②

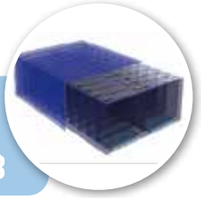
Battery Upper Cover
Protection from thermal runaway

Heat Insulation③

Battery Cell
Prevention of thermal runaway propagation



Battery Housing
Insulation in cold environment



Summary
1 High Performance Heat Insulation
Example of use
2 Heat Insulation for Battery Cell
3 Fireproof Insulation Cover
To Top
English

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High Performance Heat Insulation 「Finesulight®」

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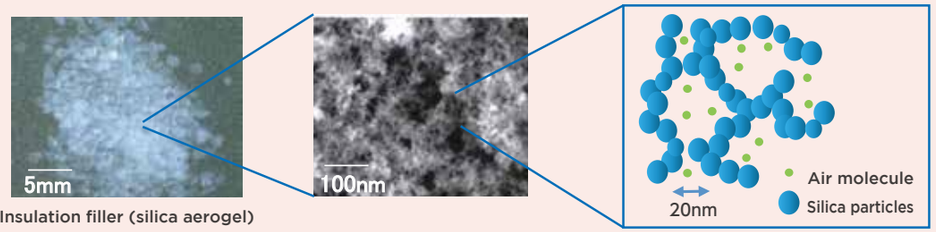
Description

Sumitomo Riko have developed a high performance heat insulation that is very thin and flexible.
By applying to interior items, this heat insulator can reduce heat transfer in and out of a vehicle, thus contributing to improving both fuel effiency and comfortability.

	Heat Insulator
Structure	 Insulation filler (silica aerogel)
Cavity Diameter	**50nm** (i/e prevent convective heat transfer)
Thermal Conductivity	**0.020W/mK (Paint film)** Lower heat conductivity than air (0.026)

Can be applied in limited space

Insulation Sheet

Air duct

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To Top

English

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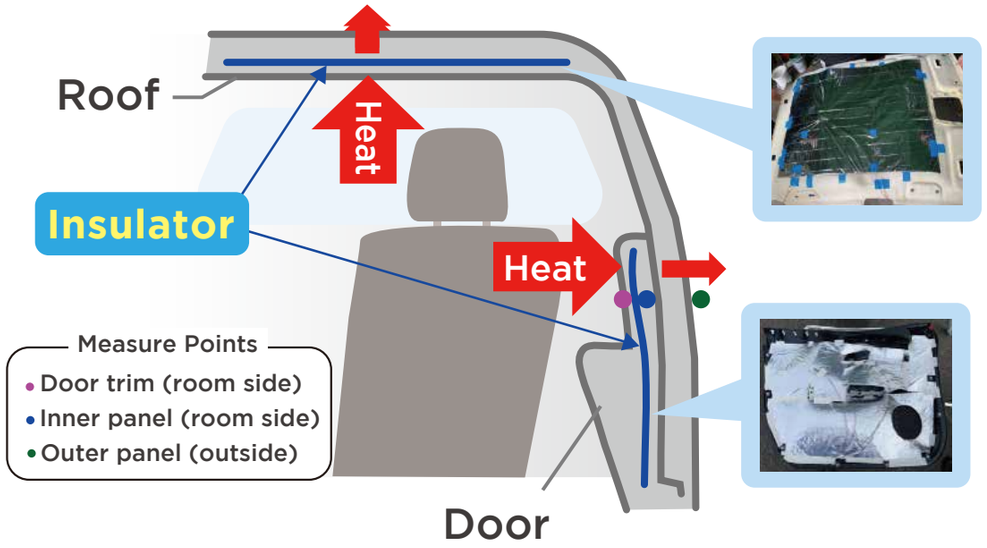
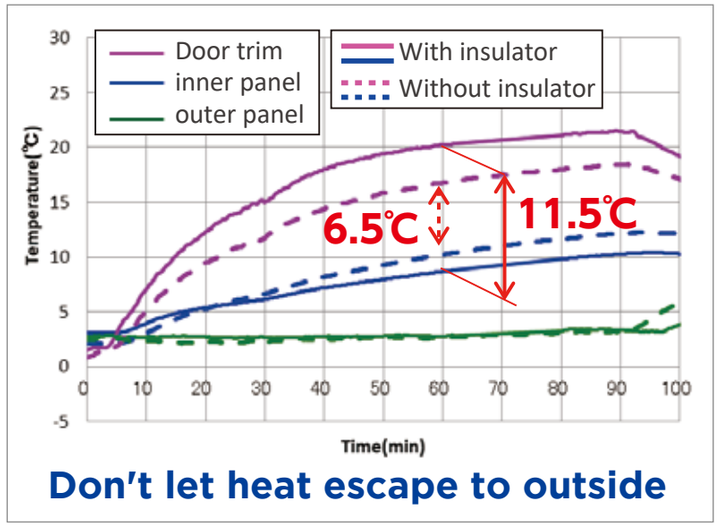
Characteristics

Measured temperature change with and without insulation.
(Condition: outside temperature 0˚C/heater usage)

Heat Insulation vehicle test





Don't let heat escape to outside

- 3.6% Reduction of heater work load
- 10.0% Reduction of heat loss from roof, door, and windshield

2% improvement of electricity efficiency

Application

- Interior parts ,air conditioning parts and battery parts for automobiles
- Home appliances, Electronic components
- Cool box, Insulation box
- Residential use

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To Top
English

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Heat Insulation for Battery Cell

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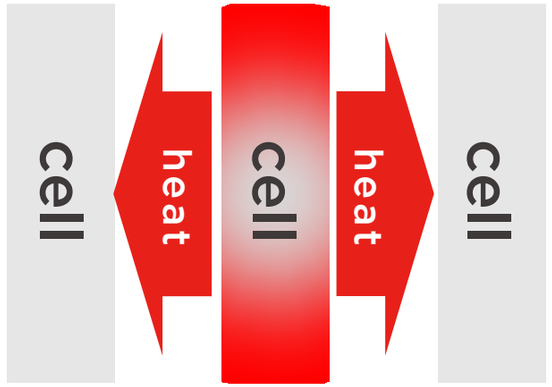
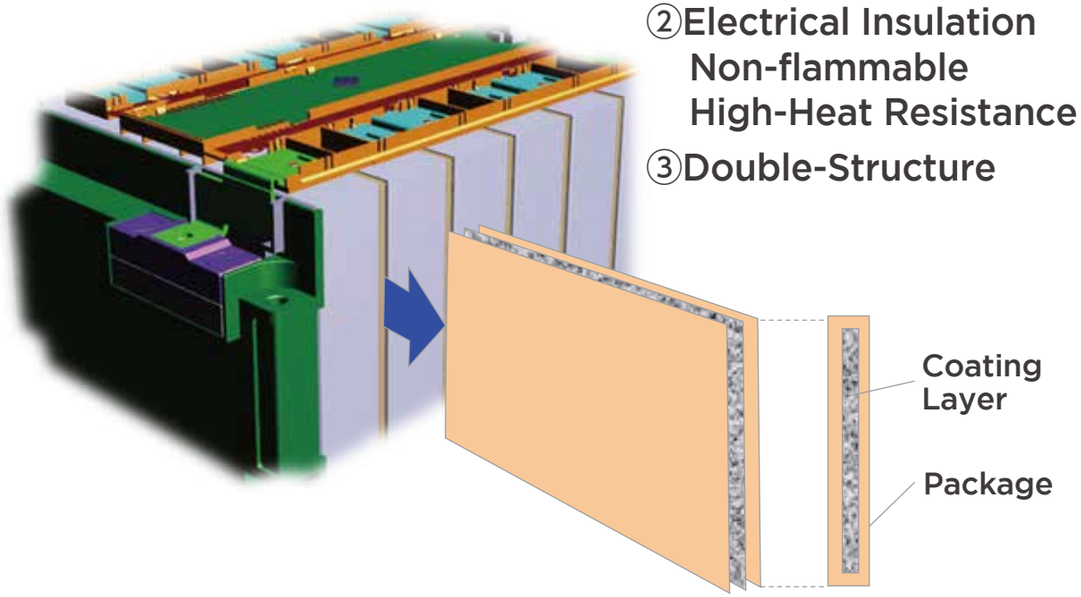
Overview

Suppresses heat chain to adjacent cells



Product Features

①Thin
High-Heat Insulation
②Electrical Insulation
Non-flammable
High-Heat Resistance
③Double-Structure



For narrow spaces between cells

To Top
English

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Fireproof Insulation Cover

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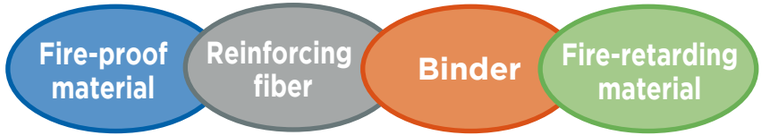
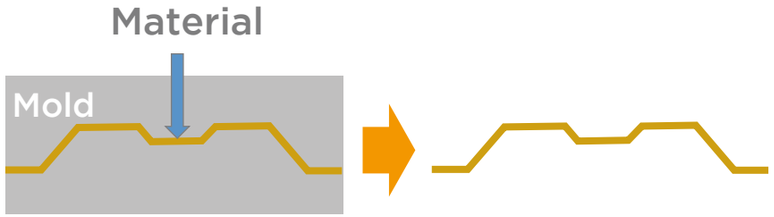
Product Features

①Fire resisting material based on rubber compounding technology (Shape retention of 10mins at 1000˚C)



②Unique material and manufacturing method to enable 3D molding

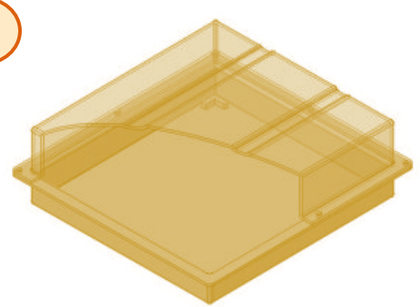


Basic Characteristics

			Actual value
size	Thickness[mm]		2.0
Fire-resistance property	After 10 mins of flame contact at 1000℃		Shape retentive, no holes
	Max temp. of the back side of flame contact		385˚C
	Flame retardancy		UL94-V0
Other character-ristics	Tensile strength [MPa]	Initial	8.9MPa
	Resistivity [ff • cm]	Initial	4.7E+12

Primary Prototype

Prototype with a small mold
⇒Good shape followability



Planning on large-scale molding

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To Top
English

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