SUMITOMO BAKELITE CO., LTD.

PRESS RELEASE

Sumitomo Bakelite Co., Ltd
January 19, 2026

Development of Industry's Thinnest-Class 0.2mm High-Voltage Insulation Sheet Contributing to Solving Challenges in Automotive Electrical Equipment and Industrial Power Supplies

Sumitomo Bakelite Co., Ltd. (Headquarters: Shinagawa-ku, Tokyo; President and Representative Director: Shinichi Kajiya) has developed an industry-leading ultra-thin flame-retardant polycarbonate insulation sheet with a thickness of just 0.2mm, offering excellent tracking resistance. This next-generation insulation material is designed to achieve both compact, lightweight designs and high safety standards, meeting the demands of electric vehicles (xEV) and high-voltage industrial equipment. We aim to accelerate its market expansion in the future.

Background of Development

With the growing demand for electricity in mobility applications driven by the proliferation of EVs, the transition to high-voltage systems of up to 800V is progressing rapidly. This shift brings challenges such as increased heat generation from high-output devices and the need for compact designs within constrained spaces. Traditionally, achieving safety and material thinness simultaneously has been a challenge for the industry. However, with this latest development, we have successfully achieved ultra-thin insulation while ensuring safety, paving the way for resolving these challenges.

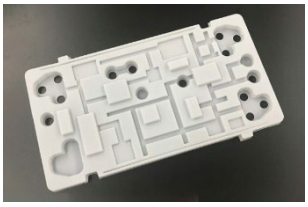
About the High-Performance Insulation Flame-Retardant Sheet

[Key Features of the Developed Product]

The newly developed insulation sheet adopts a PFAS-free and non-halogen flame-retardant formulation, meeting environmental standards while enhancing heat resistance. It achieves excellent tracking resistance (800V compliant) at an industry-leading thickness of 0.2mm, making it suitable for use in demanding high-temperature and high-voltage environments. Going forward, we plan to provide samples for customer evaluation and expand its market reach.

	Existing Product (VHF)	**Developed Product**
Tracking Resistance	600V[1)] (PLC-0)	**600V equivalent[2)] 800V equivalent[3)]**
Flame Retardant (UL94)	V-0 (0.41mm)	**V-0 equivalent (0.2mm)**
Environmental Compliance	PFAS-Free	**PFAS-Free**
Continuous Operating Temperature *Estimated by our company	125°C	**140°C**

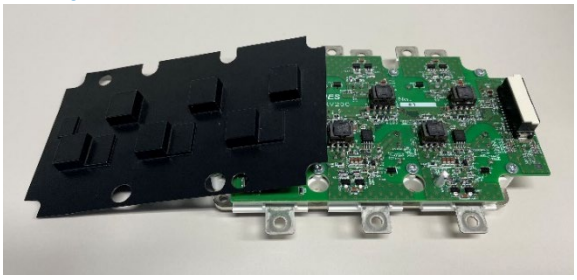
*1):ASTM D3638, 2)IEC60112, 3)UL 2597 *The above values are representative and are not guaranteed.



Main Applications

- **Electric Vehicles (xEVs):** On-board chargers (OBC), drive inverters, DC/DC converters, and insulation components for lithium-ion batteries (LiB).
- **Industrial Equipment:** Insulation components for high-voltage power supplies and surrounding equipment compatible with high-voltage systems.

Enhanced Design Flexibility through Process Compatibility



The newly developed product is a polycarbonate-based sheet, same as the highly successful FR-PC VHF Series. Like the existing mass-produced VHF Series, it supports a variety of processing methods such as punching, bending, and vacuum forming, enabling flexible adaptation to diverse customer design requirements.
In addition to facilitating miniaturization and lightweight designs through reduced thickness, it also contributes to improved assembly efficiency. The development enables more flexible layout proposals in the design of electric vehicles and industrial high-voltage power systems, where space limitations are highly restrictive.

Future Outlook

This newly developed product addresses the needs of a smart society with increasing power demands by simultaneously achieving "safety," "lightweight design," and "environmental sustainability." It contributes to solving challenges in high-voltage automotive devices and industrial high-voltage equipment, where compact designs are required. With an annual sales target of 1 billion yen, we will accelerate development and market expansion.

Exhibition at the 18th International Automotive Electronics Technology Expo

Dates: January 21 (Wed) - January 23 (Fri), 2026
Time: 10:00 AM - 5:00 PM
Venue: Tokyo Big Sight, West Hall 1, Booth W6-12

Sumitomo Bakelite Co., Ltd. will exhibit at the 18th Automotive Electronics Technology Expo held at Tokyo Big Sight. Under the theme "Creating New Value Through Resin Innovation!", the company will showcase its material technologies across four key areas: Electrification, Compact Lightweight Design, Driving Assistance, and Environment. Visitors will have the opportunity to explore new products and technologies, including this groundbreaking insulation sheet.
We look forward to welcoming you to the exhibition.
https://www.automotiveworld.jp/tokyo/en-gb.html

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