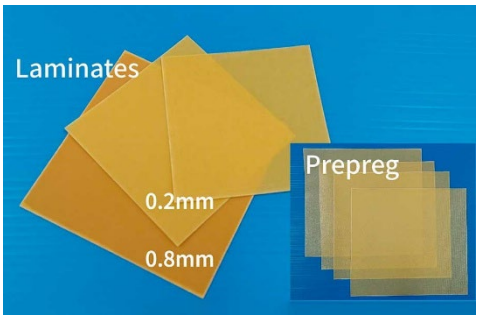
Sumitomo Bakelite Co., Ltd.
June 12, 2026

Development of a High Tracking-Resistant Laminated Board (900V)

Sumitomo Bakelite Co., Ltd. (Headquarters: Shinagawa-ku, Tokyo; President and Representative Director: Shinichi Kajiya) has developed a prepreg and laminated board with excellent tracking resistance and insulation properties using diallyl phthalate (DAP) resin. This new product boasts a tracking resistance of 900V, high dielectric breakdown strength, reliable insulation performance, high strength achieved through the incorporation of glass cloth, and heat resistance due to the thermosetting resin. These features make it a valuable contribution to insulation components and structural materials used in high-voltage applications, such as xEVs, industrial power supplies, and electronic devices.

Background of Development

We have been providing phenolic resin laminated boards and epoxy resin laminated boards to the market for years. Leveraging the formulation technologies cultivated through these products, we are actively engaged in the development of new materials and high-value-added products beyond our existing offerings.



In response to the global trend toward higher voltage applications, we have developed a material that combines high insulation, excellent tracking resistance, and heat resistance using the thermosetting resin diallyl phthalate (DAP). By integrating it with glass cloth, this laminated board material also features high strength.

Product Features

This laminated board has demonstrated a tracking resistance of 900V according to the UL2597 STT test[*1] (see Table 1 below). It also exhibits high dielectric breakdown strength and high modulus of elasticity under heat. Beyond its excellent tracking resistance, it delivers exceptional insulation properties, heat resistance, and superior strength.

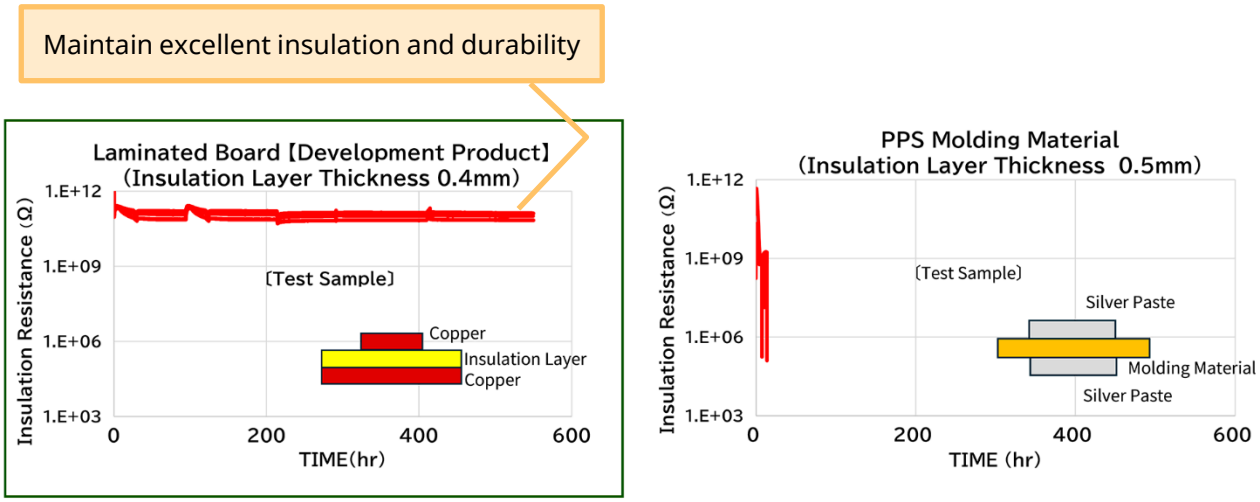
Table 1: UL2597 STT Test Results

Item	Unit・Condition	**High Tracking-Resistant Laminated Board**
Tracking Resistance	V, UL2597 STT	**900**
Flame Resistance	Compliant with UL94, Tested In-House	**V-0 Equivalent (Thickness 0.8mm)**
Specific Gravity of the Insulation Layer	-	**2.1**
Dielectric Breakdown Voltage	kV/mm	**40**
Flexural Modulus	GPa	**23(25℃)、14(17℃)**

Furthermore, this product demonstrates excellent insulation properties and durability even in high-voltage environments, enabling the thinning of insulation materials*2 and the reduction of distances between conductors*3. These features contribute to the miniaturization, slimming, and improved efficiency of electrical components (refer to Graph 1 below).

*1 Under the conventional tracking test standard based on IEC 60112 (Comparative Tracking Index Test), the maximum test voltage was limited to 600V. However, with increasing demands for higher electrical performance of materials, the new standard UL 2597 (Surface Tracking Test), established by UL Standards & Engagement, enables testing at voltages of up to 900V.
*2 Materials with lower insulation properties require greater thickness to ensure sufficient insulation, whereas materials with higher insulation properties can achieve thinner layers.
*3 Materials with low tracking resistance (durability) may lead to conduction or short circuits when the distance between conductors is reduced. However, using materials with excellent tracking resistance allows for shorter distances between conductors while still maintaining reliable insulation.

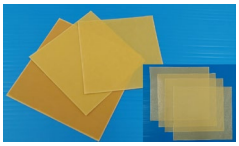
Graph 1: Interlayer Insulation Reliability Test Results **(Applied Voltage: 4kV, Test Conditions: 85°C/85%)**



Future Plans

Moving forward, we will proceed with sample evaluations. Additionally, we will collaborate with our other high tracking-resistant products, such as molding materials and powder coatings, to offer tailored proposals that meet the specific usage requirements and needs of our customers.

Lineup of High Tracking-Resistant Products

	Laminate (Development Product)	Molding Compound AM-3800	Coating Powder (Development Product)
			
Tracking Resistant (UL2597 STT)	**900V (UL2597 STT)**		
Feature	**High Strength Heat Resistance Large-Area Sample**	Heat Resistance Molding / Forming Process	Heat Resistance High Adhesion to Metal
Substrate / Material	**Glass Cloth Composite Thermosetting Resin (DAP resin system)**	Glass Fiber Composite Thermosetting Resin (DAP resin system)	Thermosetting Resin
Product Page	High Tracking-Resistant Laminated Board (Development Product)	Diallyl Phthalate (DAP) Molding Compound for High Voltage (900V) and High Heat Resistance	Epoxy Resin Coating Powder with High Tracking Resistance for Electrical Insulation

For inquiries regarding this product:
Substrate Materials Sales Dept., Material Solutions Sales Div., Sumitomo Bakelite Co., Ltd.
TEL: +81-3-5462-4079 https://inquiry.sumibe.co.jp/m/e_circuit_circuitry

Corporate Communications Dept.
Corporate General Affairs Div.

Tennoz Parkside Building
5-8 Higashi-Shinagawa 2-chome, Shinagawa-ku, Tokyo, Japan

TEL: +81-3-5462-4818
FAX: +81-3-5462-4876
info@sumibe.co.jp