

Aerogel Battery Insulation Market to Expand at 28.3% CAGR, Reaching US\$ 4,543 Million by 2035 | Fact.MR Report

Aerogel battery insulation market accelerates with demand for lightweight thermal solutions: Advanced material innovations and EV adoption drive growth.

ROCKVILLE, MD, UNITED STATES, May 12, 2025 /EINPresswire.com/ --According to Fact.MR, a market research and competitive intelligence provider, the <u>aerogel battery insulation</u> <u>market</u> was valued at USD 293 million



in 2024 and is expected to grow at a CAGR of 28.3% during the forecast period of 2025 to 2035.

The market for aerogel batteries insulation is gaining traction across battery manufacturers looking for materials with superior thermal resistance, light weight and energy efficiency in nextgen energy storage solutions. This expansion is primarily influenced by the skyrocketing interest for the battery safety, thermal management, longevity and performance optimization including EVs, Aerospace, and energy storage fields. Tightening thermal safety and emission legislations are raising market demand for high-performance insulation materials, with aerogel-based solutions holding a substantial technological edge.

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Progress in aerogel processing has resulted in improved material characteristics including flexibility, compressibility, and durability, thereby overcoming the former problems like brittleness. These developments have expanded the application field of aerogel, in particular for the heavy demand applications like EV (Electric Vehicle) battery pack, hybrid vehicle and aerospace system, regarding its lightweight and thermal stability.

The secular push toward sustainability and, in particular, the proliferation of EVs and alternative forms of energy is supporting market growth. Aerogel insulator adoption in battery for enhanced

safety, life, and energy density, as well as developing applications in grid-scale storage and portable electronics, provide new opportunity for future growth.

Key Takeaways from Market Study

The aerogel battery insulation market is projected to grow at 3% CAGR and reach USD 4,543 million by 2035, The market created an absolute \$ opportunity of USD 4,167 million between 2025 to 2035

North America is a prominent region that is estimated to hold a market share of 5% in 2035, North America is expected to create an absolute \$ opportunity of USD 926 million

"Stricter safety standards for batteries, rising demand for eco-friendly energy storage solutions, and the expanding use of cutting-edge thermal insulation materials in EVs, aerospace, and power systems are expected to drive significant growth in the aerogel battery insulation market" says a Fact.MR analyst.

Leading Players Driving Innovation in the Aerogel Battery Insulation Market:

Key players in the aerogel battery insulation industry include Aerogel Technologies, LLC, Armacell International S.A., Aspen Aerogels, Inc., Cabot Corporation, Enersens, Guangdong Alison Hi-Tech Co., Ltd., IBIH (Henan IBIH Advanced Materials Co., Ltd.), Nano Tech Co., Ltd., Sino Aerogel, and Zhejiang UGOO Technology Co., Ltd.

Market Development:

The aerogel battery insulation market is growing market majorly due to development of material science and the increase in thermal management requirement in energy storage systems. Advances in aerogel chemistry have made stronger, nimbler materials that stand over a wider range of temperatures, and thus suitable for use in electric car batteries, aerospace systems, and high-powered electronics. Major global players are increasing production capacity and investing in scalable eco-friendly manufacturing processes. Rapid developments in aerogel-based insulation for EV battery modules are also improving safety and lifespan, with new applications in grid energy storage and consumer electronics opening up further market prospects.

For example, in September, 2024, Armacell announced the launch of its next-generation aerogel insulation product, ArmaGel[®] XG, and the opening of a new production facility in India. This expansion aims to meet the growing demand for advanced thermal insulation materials in EV batteries and other applications. ArmaGel[®] XG offers enhanced thermal performance and complies with ASTM C1728 standards.

Aerogel Battery Insulation Industry News:

In November 2024, Aerogel Technologies secured a U.S. patent for its innovative aerogel material, which combines waterproof, fireproof, mechanical protection, dust-free, and halogen-free properties. This breakthrough addresses the key limitations of organic polymer-based aerogels, which are generally more vulnerable to fire and water compared to inorganic alternatives. The patented material, Airloy[®] H116, is based on a polyimide polymer engineered for high-performance applications. It withstands temperatures above 600°F while remaining 10 times lighter than conventional plastics and offering twice the insulation capability of fiberglass. Airloy[®] H116 is available in three formats: shaped 3D structures, thin films, and conformal coatings. It can also be integrated with other materials such as foams and textiles, broadening its application range across industries.

Similarly, in May 2023, Cabot Corporation introduced ENTERA[™] aerogel particles, a new portfolio designed to enhance thermal insulation in EV lithium-ion batteries. The ENTERA[™] EV range includes three products—ENTERA[™] EV5200, EV5400, and EV5800—available in particle sizes from microns to millimeters. These particles can be incorporated into a variety of geometric thermal barrier formats, including blankets, pads, sheets, films, foams, and coatings. With over 90% air content, ENTERA[™] aerogel particles are 20 times lighter than traditional insulation additives, contributing to improved energy efficiency and extended driving range in electric vehicles.

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More Valuable Insights on Offer

Fact.MR, in its new offering, presents an unbiased analysis of the the aerogel battery insulation market, presenting historical data for 2020 to 2024 and forecast statistics for 2025 to 2035.

The study reveals essential insights on the basis of By Material Type (Silica Aerogel, Polymer Aerogel, Carbon Aerogel, and Others), By Form (Blankets, Films/Pads, Particles/Additives, and Others), By End-Use Industry (Automotive (Electric Vehicles), Consumer Electronics, Energy Storage Systems, Aerospace and Defense, and Others (Medical), By Sales Channel (Direct Sales & Indirect Sales) and Across Major Regions of the World (North America, Latin America, Western Europe, Eastern Europe, East Asia, South Asia & Pacific, and Middle East & Africa).

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The global <u>building insulation material market</u> is set to grow from US\$ 37.56B in 2024 to US\$ 71.85B by 2034, expanding at a 6.7% CAGR, per Fact.MR.

The global <u>pipeline thermal insulation material market</u> will grow from US\$ 3.02B in 2024 to US\$ 5.47B by 2034, at a CAGR of 6.1% during 2024-2034.

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