

Carbon Foam Market Size Worth USD 66.6 Million in 2033 | Emergen Research

The growth in the carbon foam market because it has great qualities like high thermal conductivity, low density, and great corrosion resistance

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/EINPresswire.com/ -- The [Carbon Foam market](#) is expected to grow from an estimated USD 25.6 billion in 2024 to USD 66.6 billion in 2033, at a CAGR of 11.2%. The global carbon foam market is witnessing significant growth, driven by its unique properties like high thermal conductivity, low density, and exceptional corrosion resistance. These qualities make carbon foam highly valuable in various industries, including aerospace, automotive, defense, and energy storage.



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Carbon foam is particularly beneficial in sectors requiring energy-efficient materials for thermal management systems, such as electronics and renewable energy. The increased focus on sustainability and the demand for eco-friendly materials are also fueling market expansion, as carbon foam is recyclable and contributes to reducing energy consumption.

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The aerospace and defense industries are notable drivers of this growth. Carbon foam is increasingly used for applications like thermal protection systems, lightweight armor, and structural components for aircraft and rockets. Additionally, its role in stealth technology and hypersonic weapons has further cemented its importance in defense and military sectors. The global rise in demand for commercial aircraft, which is expected to reach 42,595 units by 2042, will likely lead to a surge in the use of carbon foam in aircraft manufacturing.

Recent reports reveal that Europe has seen a significant increase in airplane shipments, with

13.6% of global aircraft deliveries in 2023. The growing government investments in aerospace and defense, including military spending in countries like Germany and China, are expected to expand opportunities for carbon foam applications.

However, the carbon foam market faces challenges due to the high production costs associated with its manufacturing processes. The intricate production methods, including controlled graphitization and high-temperature pyrolysis, demand specialized equipment and significant energy, which raises costs. Additionally, the raw materials needed for production, such as high-purity carbon precursors, are expensive and difficult to source, limiting the material's widespread use.

These cost-related barriers are especially impactful in sectors with budget constraints, hindering broader adoption beyond specialized industries like aerospace and defense. To address this, research is underway to develop cost-effective manufacturing techniques and alternative raw materials to make carbon foam more accessible to a wider range of industries.

In terms of market segments, graphitic carbon foam dominates, accounting for the largest revenue share in 2023. Its superior thermal and electrical conductivity, chemical stability, and low density make it the preferred choice for energy storage, electronics, and aerospace thermal control applications. Improvements in manufacturing processes have made graphitic carbon foam more widely available, further boosting its popularity.

On the other hand, non-graphitic carbon foam is growing at the fastest rate due to its affordability and unique qualities that make it suitable for new applications. It is increasingly used in industries like transportation and construction for soundproofing, insulation, and filtration. The rising demand for lightweight materials, combined with advances in manufacturing efficiency, is expected to drive the rapid expansion of the non-graphitic carbon foam segment.

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Carbon Foam Top Companies and Competitive Landscape

There is a lot of competition in the Carbon Foam Market, with major players focusing on new ideas, product creation, and working together strategically. The market is dominated by large corporations as Poco Graphite Inc., Koppers Inc., and CFOAM Limited, who use robust distribution networks and cutting-edge manufacturing processes. New companies are spending money on research to create sustainable and reasonably priced carbon foam products. Forming alliances with the energy, automobile, and aerospace sectors is a typical tactic to increase market penetration.

The rivalry in the worldwide market is also getting more intense as regional firms in Asia Pacific

gain traction by providing competitive prices and meeting local demand.

In November 2023, Scientists from the Siberian division of the Russian Academy of Sciences' Institute of Catalysts were able to obtain carbon foam. Waste from oil refineries serves as the new substance's raw material. Foaming agents are not required for the production of this substance.

Some of the key companies in the global Carbon Foam market include:

American Elements

Carbon-core Corporation

CONSOL Energy Inc.

ERG Aerospace

Firefly International Energy

Koppers Inc.

Entegris Inc.

Ultramet

Xiamen Zopin New Material Limited

Carbon Foam Latest Industry Updates

In June 2023, Comfort product producers and marketers Carpenter Co. purchased Recticel N.V.'s Foams Division, which included the Otto Bock and Foam Partner processes. This results in the creation of the largest vertically integrated producer of polyurethane foams and specialized polymer products worldwide. Future improvements in polyurethane foam technology and significant market expansion will be fueled by this acquisition.

In June 2023, A joint venture was established to manufacture insulating jackets in the United States by Armacell, a company that provides flexible foam for equipment insulation and tailored foams, enhanced with AIS in the engineering, manufacturing, and application of insulation and passive fire prevention systems. Additionally, Armacell AIS, LLC is currently run out of Armacell's current Yukon location.

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Carbon Foam Market Segmentation Analysis

By Type Outlook (Revenue, USD Million; 2020-2033)

Graphitic

Non-graphitic

By End-user Industry Outlook (Revenue, USD Million; 2020-2033)

Aerospace and Defense

Building and Construction

Automotive

Electrical

Industrial

Other End-user Industries

By Geography Outlook (Revenue, USD Million; 2020-2033)

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

Benelux

Rest of Europe

Asia-Pacific

China

India

Japan

South Korea

Rest of Asia-Pacific

Latin America

Brazil

Rest of Latin America

Middle East and Africa

Saudi Arabia

UAE

South Africa

Turkey

Rest of MEA

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