+357 96 030922
info@marketpublishers.com

Global Porous Carbon CVD Silicon-Carbon Material Frameworks Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

https://marketpublishers.com/r/G7FED85A9D6BEN.html
Date: May 2026
Pages: 153
Price: US$ 3,480.00 (Single User License)
ID: G7FED85A9D6BEN

Abstracts

According to our (Global Info Research) latest study, the global Porous Carbon CVD Silicon-Carbon Material Frameworks market size was valued at US$ 32.61 million in 2025 and is forecast to a readjusted size of US$ 2859 million by 2032 with a CAGR of 76.2% during review period.

Porous carbon serves as the carbon framework for silicon-carbon anodes. Porous carbon materials possess advantages such as high specific surface area, controllable microstructure, abundant pore structure, good conductivity, and high stability. The high specific surface area allows porous carbon to bind more lithium ions, providing high capacity for lithium-ion batteries. The multidimensional and complex pore structure provides effective and rapid diffusion channels for lithium ions, resulting in excellent electrochemical performance. The main raw materials for porous carbon are resin-based and biomass-based methods. Currently, biomass raw materials include renewable resources such as coconut shells, bamboo, rice husks, sawdust, and starch; resin raw materials are mainly phenolic resins, with mature production processes, controllable chemical structures, and better pore uniformity and batch consistency. However, due to higher raw material costs, the price is generally between 250,000 and 300,000 RMB per ton. Because the raw material price of biomass is relatively cheaper than that of resin, the cost per ton for resin-based porous carbon is significantly higher than that for bio-based porous carbon. The core of porous carbon production is the pore-forming process, primarily achieved through steam or alkali activation. This involves mixing an activator with a carbon precursor under high-temperature, inert gas protection to initiate a pore-forming reaction. Generally, this requires first carbonizing the carbon precursor at high temperatures (typically above 800?), followed by the use of steam or alkali as an activator to react with the precursor and achieve the pore-forming reaction.

+357 96 030922
info@marketpublishers.com

Based on chemical formulas and actual production conditions, on average, 1 ton of silicon-carbon anode material requires 0.5 tons of porous carbon and 0.6-0.7 tons of silane raw materials.

Porous carbon CVD silicon-carbon material frameworks refer to porous carbon framework materials prepared by chemical vapor deposition (CVD) for silicon-carbon anodes. This carbon framework has controllable pore sizes and ordered or semi-ordered pore structures, serving to support silicon particles, buffer the volume expansion of silicon during charge and discharge, and provide electronic conductivity pathways. The framework prepared by CVD has uniform pore size and high specific surface area, which can significantly improve the cycle stability and rate performance of high-silicon anodes.

Capacity construction:

On March 4, 2024, Zhejiang Zhongning Silicon Industry Co., Ltd., the holding company of Do-Fluoride New Materials Co., Ltd., completed a project with a capacity of 2,500 tons/year of porous carbon (used for the production of silicon-carbon anode materials).

On June 28, 2025, Hua County Dachaolin Real Estate Co., Ltd. completed a 3,000-ton porous carbon production line in Hua County, Anyang. This production line will effectively promote technological progress and industrial upgrading in the field of energy storage carbon materials.

On July 14, 2025, Shenzhen Solide New Materials Technology Co., Ltd. completed the first phase of its 10,000-ton/year porous carbon project for silicon-carbon anode materials (1,000 tons/year of porous carbon).

On January 7, 2026, the signing ceremony for the 10,000-ton-per-year porous carbon and silicon-carbon The Shanghai Keyun Industrial Co., Ltd. anode material project was held in Yu'an District, Lu'an City, Anhui Province. The porous carbon and silicon-carbon anode material project covers an area of ??approximately 100 mu and is expected to achieve an annual output of 10,000 tons of porous carbon when fully operational.

In 2025, the global shipment volume of Porous carbon CVD silicon-carbon material frameworks is approximately 0.075 million tons, with a gross profit margin of approximately 25%-40%.

Traditional major producers of porous carbon materials globally include the United

+357 96 030922
info@marketpublishers.com

States, Japan, and the Netherlands. However, due to constraints on raw materials and rising production costs, the porous carbon materials industry is gradually shifting to developing countries. While porous carbon material production in developed countries and regions such as North America, Japan, and Western Europe is gradually decreasing, domestic market demand continues to grow steadily. However, domestic production cannot meet these demands, necessitating substantial imports.

In terms of regional distribution of demand for porous carbon materials, China, the United States, the European Union, and Japan are the main consuming regions, with China being the world's second-largest consumer of porous carbon materials after the United States. In recent years, with the continuous development of the macroeconomy in developing countries, industrial growth has led to increasingly prominent environmental pollution problems. Consequently, countries have continuously strengthened their efforts in environmental governance and protection, driving rapid growth in the consumption of porous carbon materials in these regions.

The porous carbon market for silicon-carbon anodes is experiencing unprecedented development opportunities, benefiting from the strong demand from the global lithium-ion battery industry for higher energy density, longer cycle life, and faster charging rates. As the electric vehicle (EV) market continues to expand, the demand for high-performance silicon-carbon anode materials for power batteries is growing rapidly. Porous carbon, as a core material for buffering silicon volume expansion and improving cycle stability, is becoming increasingly important. At the same time, the pursuit of high-efficiency batteries in downstream markets such as portable electronic devices and energy storage systems is constantly driving technological innovation and large-scale application of porous carbon materials. Government policies, industrial investment, and battery manufacturers' proactive investment in technological upgrades have provided a strong impetus for the development of this emerging material market. Despite its promising market prospects, the porous carbon industry still faces numerous challenges and risks. On the one hand, the preparation of high-performance porous carbon materials with controllable pore size distribution and batch-consistent quality involves complex processes and high energy consumption, resulting in high costs and hindering large-scale production. On the other hand, fluctuations in raw material prices, supply chain instability, and the varying performance and quality requirements of different downstream customers put pressure on suppliers' quality control and delivery capabilities. Furthermore, the industry has high technological barriers and a long investment recovery period, posing certain market entry risks for new entrants. Suppliers with high market concentration hold a large market share, leaving small and medium-sized enterprises facing both cost and technological challenges in competition.

+357 96 030922
info@marketpublishers.com

From 2025 to 2032, the downstream demand landscape will continue to optimize, with power batteries remaining the largest consumer of porous carbon materials, particularly in high-energy-density batteries, high-rate fast-charging batteries, and solid-state battery architectures, where its role in improving the overall performance of battery systems becomes increasingly crucial. Compared to traditional graphite anodes, porous carbon combined with high-silicon content anode systems will enable electric vehicles with higher energy density and longer lifespans. In addition, the demands for longer-life and smaller batteries in the consumer electronics and energy storage markets will also promote the expansion of porous carbon materials in various battery forms. Overall, the future market demand structure will show a trend of parallel development, with power batteries dominating and innovative applications expanding.

This report is a detailed and comprehensive analysis for global Porous Carbon CVD Silicon-Carbon Material Frameworks market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global Porous Carbon CVD Silicon-Carbon Material Frameworks market size and forecasts, in consumption value ($ Million), sales quantity (Tons), and average selling prices (US$/Ton), 2021-2032

Global Porous Carbon CVD Silicon-Carbon Material Frameworks market size and forecasts by region and country, in consumption value ($ Million), sales quantity (Tons), and average selling prices (US$/Ton), 2021-2032

Global Porous Carbon CVD Silicon-Carbon Material Frameworks market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (Tons), and average selling prices (US$/Ton), 2021-2032

Global Porous Carbon CVD Silicon-Carbon Material Frameworks market shares of main players, shipments in revenue ($ Million), sales quantity (Tons), and ASP (US$/Ton), 2021-2026

+357 96 030922
info@marketpublishers.com

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for Porous Carbon CVD Silicon-Carbon Material Frameworks

To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

This report profiles key players in the global Porous Carbon CVD Silicon-Carbon Material Frameworks market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Kuraray, Ingevity Corporation, Osaka Gas Chemicals, Haycarb, Momentum Materials Solutions, Fujian Yuanli, Hua County Dachaolin Real Estate Co., Ltd., SinoSteel Group Maanshan Mining Research Institute Co., Ltd., Aemcn, KBC Corporation, Ltd., etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Porous Carbon CVD Silicon-Carbon Material Frameworks market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

Biomass Porous Carbon

Resin Porous Carbon

Pitch/Coal Porous Carbon

+357 96 030922
info@marketpublishers.com

Market segment by Porous

Microporous(50nm)

Market segment by Surface Area

Standard?Surface Area 1,500?1,850 m?/g?

High Performance?Surface Area 2,000?2,350 m?/g?

Others

Market segment by Application

Power Batteries

Consumer Batteries

Drones and EVOLT

Others

Major players covered

Kuraray

Ingevity Corporation

Osaka Gas Chemicals

Haycarb

Momentum Materials Solutions

Fujian Yuanli

+357 96 030922
info@marketpublishers.com

Hua County Dachaolin Real Estate Co., Ltd.

SinoSteel Group Maanshan Mining Research Institute Co., Ltd.

Aemcn

KBC Corporation, Ltd.

Shanghai Emperor of Cleaning Hi-Tech Co., Ltd.

Guangdong Dowstone Technology Co., Ltd.

Xuancheng Silike New Materials Co., Ltd.

Norit

Shengquan Group

Fujian Xinsen Carbon Co., Ltd.

Bengbu Gifuli New Materials

Shenzhen Solide New Materials Technology Co., Ltd.

Do-Fluoride New Materials Co., Ltd.

Shanghai Putailai New Energy Technology Co., Ltd.

Jiangsu PURESTAR Environmental Protection Technology Co., Ltd.

BTR New Material Group Co., Ltd.

Hunan Zhongke Shinzoom Co., Ltd.

Shanghai XFH Technology Co.,Ltd

Market segment by region, regional analysis covers

+357 96 030922
info@marketpublishers.com

North America (United States, Canada, and Mexico)

Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)

Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)

South America (Brazil, Argentina, Colombia, and Rest of South America)

Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Porous Carbon CVD Silicon-Carbon Material Frameworks product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of Porous Carbon CVD Silicon-Carbon Material Frameworks, with price, sales quantity, revenue, and global market share of Porous Carbon CVD Silicon-Carbon Material Frameworks from 2021 to 2026.

Chapter 3, the Porous Carbon CVD Silicon-Carbon Material Frameworks competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Porous Carbon CVD Silicon-Carbon Material Frameworks breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026.and Porous Carbon CVD Silicon-Carbon Material Frameworks market forecast, by regions, by Type, and by Application, with sales and revenue, from 2027 to 2032.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

+357 96 030922
info@marketpublishers.com

Chapter 13, the key raw materials and key suppliers, and industry chain of Porous Carbon CVD Silicon-Carbon Material Frameworks.

Chapter 14 and 15, to describe Porous Carbon CVD Silicon-Carbon Material Frameworks sales channel, distributors, customers, research findings and conclusion.

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

3 COMPETITIVE ENVIRONMENT: POROUS CARBON CVD SILICON-CARBON MATERIAL FRAMEWORKS BY MANUFACTURER

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Figures

LIST OF FIGURES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Global Porous Carbon CVD Silicon-Carbon Material Frameworks Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

Product link: https://marketpublishers.com/r/G7FED85A9D6BEN.html

Price: US$ 3,480.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/G7FED85A9D6BEN.html