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Global Porous Carbon for Silicon-Carbon Anodes Market Growth 2026-2032

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Abstracts

The global Porous Carbon for Silicon-Carbon Anodes market size is predicted to grow from US$ 31.00 million in 2025 to US$ 3188 million in 2032; it is expected to grow at a CAGR of 80.9% from 2026 to 2032.

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. 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

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silane raw materials.

Porous carbon for silicon-carbon anodes is a type of high-porosity carbon-based material specifically designed for silicon-based lithium-ion battery anode materials. It acts as a structural support and buffer framework for silicon particles, mitigating the volume expansion problem of silicon during lithiation/delithiation processes, thereby improving cycle stability and electrochemical performance. This type of porous carbon typically possesses a controllable pore size distribution and high specific surface area, forming an efficient electron/ion transport network, which contributes to the overall mechanical stability and conductivity of the electrode.

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 for silicon-carbon anodes 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 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

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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. 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

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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.

LP Information, Inc. (LPI) ' newest research report, the ?Porous Carbon for Silicon-Carbon Anodes Industry Forecast? looks at past sales and reviews total world Porous Carbon for Silicon-Carbon Anodes sales in 2025, providing a comprehensive analysis by region and market sector of projected Porous Carbon for Silicon-Carbon Anodes sales for 2026 through 2032. With Porous Carbon for Silicon-Carbon Anodes sales broken down by region, market sector and sub-sector, this report provides a detailed analysis in US$ millions of the world Porous Carbon for Silicon-Carbon Anodes industry.

This Insight Report provides a comprehensive analysis of the global Porous Carbon for Silicon-Carbon Anodes landscape and highlights key trends related to product segmentation, company formation, revenue, and market share, latest development, and M&A activity. This report also analyzes the strategies of leading global companies with a focus on Porous Carbon for Silicon-Carbon Anodes portfolios and capabilities, market entry strategies, market positions, and geographic footprints, to better understand these firms? unique position in an accelerating global Porous Carbon for Silicon-Carbon Anodes market.

This Insight Report evaluates the key market trends, drivers, and affecting factors shaping the global outlook for Porous Carbon for Silicon-Carbon Anodes and breaks down the forecast by Type, by Application, geography, and market size to highlight emerging pockets of opportunity. With a transparent methodology based on hundreds of bottom-up qualitative and quantitative market inputs, this study forecast offers a highly nuanced view of the current state and future trajectory in the global Porous Carbon for Silicon-Carbon Anodes.

This report presents a comprehensive overview, market shares, and growth opportunities of Porous Carbon for Silicon-Carbon Anodes market by product type, application, key manufacturers and key regions and countries.

Segmentation by Type:

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Biomass Porous Carbon

Resin Porous Carbon

Pitch/Coal Porous Carbon

Segmentation by Porous:

Microporous(50nm)

Segmentation by Preparation Technology:

Chemical Vapor Deposition

Physical Activation

Chemical Activation

Template Method

Biomass-derived

Segmentation by Surface Area:

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

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

Segmentation by Application:

Power Batteries

Consumer Batteries

Drones and EVOLT

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- Others

This report also splits the market by region:

- Americas
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  - Canada
  - Mexico
  - Brazil
- APAC
  - China
  - Japan
  - Korea
  - Southeast Asia
  - India
  - Australia
- Europe
  - Germany
  - France
  - UK
  - Italy

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Russia

Middle East & Africa

Egypt

South Africa

Israel

Turkey

GCC Countries

The below companies that are profiled have been selected based on inputs gathered from primary experts and analysing the company's coverage, product portfolio, its market penetration.

Kuraray

Ingevity Corporation

Osaka Gas Chemicals

Haycarb

Fujian Yuanli

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.

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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.

Key Questions Addressed in this Report

What is the 10-year outlook for the global Porous Carbon for Silicon-Carbon Anodes market?

What factors are driving Porous Carbon for Silicon-Carbon Anodes market growth, globally and by region?

Which technologies are poised for the fastest growth by market and region?

How do Porous Carbon for Silicon-Carbon Anodes market opportunities vary by end market size?

How does Porous Carbon for Silicon-Carbon Anodes break out by Type, by Application?

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