Needle Coke Market Driven by Rising Demand for Premium Graphite Electrodes and EV Batteries

Graphite electrodes are extensively used in electric arc furnaces and ladle furnaces for steel and non-ferrous metal production.

Needle Coke Market Rising Demand

WILMINGTON, DE, UNITED STATES, July 6, 2026 /EINPresswire.com/ -- The increasing adoption of super-premium needle coke, known for its low sulfur content and superior performance characteristics including a low puffing rate, low coefficient of thermal expansion, and large particle size fueling the expansion of the global needle coke market.

According to a report published by Allied Market Research titled "Needle Coke Market by Type (Petroleum Based, Coal Based), by Application (Graphite Electrodes, Lithium-ion Battery, Special Carbon Material, Rubber Compounds, Others): Global Opportunity Analysis and Industry Forecast, 2021–2031," the global needle coke market was valued at $2.3 billion in 2021 and is projected to reach $5.7 billion by 2031, growing at a CAGR of 9.8% from 2022 to 2031. The report provides an in-depth analysis of market dynamics, emerging trends, competitive landscape, investment opportunities, value chain, and regional outlook.

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https://www.alliedmarketresearch.com/request-sample/17830

Market Drivers and Opportunities:

- The growing preference for super-premium needle coke continues to strengthen market growth due to its exceptional physical and chemical properties. Its low sulfur content, excellent thermal stability, and minimal expansion during graphitization make it an ideal raw material for manufacturing high-performance graphite electrodes and advanced battery materials.

- However, the relatively high production cost of needle coke remains a key challenge for manufacturers. Despite this restraint, continuous technological advancements in production processes and increasing investments in energy storage technologies are expected to create significant growth opportunities over the coming years.

Petroleum-Based Needle Coke Leads the Market:

- Based on type, the petroleum-based segment accounted for more than two-thirds of the global market revenue in 2021 and is expected to maintain its leadership through 2031. This segment is also anticipated to register the fastest CAGR of 10.2% during the forecast period.

- Growth is primarily attributed to the increasing availability of heavy oils, expanding petroleum coke production, and rising demand from steel, cement, and power generation industries.

Graphite Electrodes Remain the Largest Application:

- Among applications, the graphite electrodes segment held nearly four-fifths of the global market share in 2021 and is expected to remain the dominant application through 2031.

- Graphite electrodes are extensively used in electric arc furnaces and ladle furnaces for steel and non-ferrous metal production. Their applications also extend to batteries, electroplating, electrolysis, welding, cathodic protection, membrane electrode assemblies, chemical analysis, and specialized industrial equipment.

- Meanwhile, the lithium-ion battery segment is projected to witness the fastest growth, registering a CAGR of 11.1% during the forecast period. Rising demand for consumer electronics, power tools, energy storage systems, and electric vehicles is significantly increasing the consumption of needle coke in battery-grade anode materials.

Asia-Pacific Dominates the Global Market:

- Asia-Pacific accounted for nearly three-fifths of the global needle coke market in 2021 and is expected to maintain its leading position throughout the forecast period. The region is also forecast to grow at the fastest CAGR of 10.7%.

- Market growth is driven by expanding steel production, increasing graphite electrode manufacturing capacity, rapid industrialization, and the accelerating adoption of electric vehicles across countries such as China, India, Japan, and South Korea.

Leading Market Players:-

Key companies operating in the global needle coke market include:

- Essar Oil Ltd.
- HEG Limited
- Indian Oil Corporation
- Asbury Carbons Inc.
- Mott Corporation
- Nippon Steel Corporation
- Petroleum Coke Industry
- Sumitomo Corporation
- GrafTech International Ltd.
- Phillips 66
- Reliance Industries
- Shell Global
- Tokai Carbon Co., Ltd.
- Baosteel Group
- Mitsubishi Chemical Corporation

These companies continue to focus on capacity expansion, technological innovation, strategic partnerships, and product development to strengthen their market presence and address the growing demand from the steel and electric vehicle industries.

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