

Needle Coke Market Future Proofing Your Business with Market Size Growth Strategies 2031

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/EINPresswire.com/ -- Needle coke is a specialized form of petroleum coke that is used in the production of graphite electrodes, which are essential components in electric arc furnaces (EAFs) for steel production, as well as in the production of other specialty carbon and graphite products. The [needle coke industry](#) plays a crucial role in various industrial processes, particularly in the steel and metallurgy sectors.



Needle Coke Market Research

According to the report, the global needle coke industry was estimated at \$2.3 billion in 2021, and is anticipated to hit \$5.7 billion by 2031, registering a CAGR of 9.8% from 2022 to 2031.

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Needle coke production process: Needle coke is produced from a specific type of petroleum feedstock called decant oil, which is derived as a byproduct of the crude oil refining process. The production process involves several steps, including deasphalting, delayed coking, and graphitization. The goal is to create coke with a highly aligned, needle-like structure, which gives it its name.

Growing popularity of super premium grade needle coke due to its low sulfur content and excellent intrinsic properties such as low puffing rate, low coefficient of thermal expansion, and large particle size drives the growth of the global needle coke market. On the other hand, high

production cost of needle coke impedes the growth to some extent.

Applications:

- Graphite Electrodes: The primary application of needle coke is in the production of high-quality graphite electrodes. These electrodes are used in EAFs to melt scrap steel and produce high-quality steel products. The steel industry is the largest consumer of needle coke.
- Specialty Carbon Products: Needle coke is also used in the production of various specialty carbon and graphite products, including lithium-ion battery anodes, aerospace materials, and high-temperature furnace components.

The graphite electrodes segment garnered around four-fifths of the global needle coke market share in 2021, and is expected to retain its dominance by 2031. This is because graphite electrodes are widely used in the production of steel and other non-ferrous metals via electric arc furnaces and ladle furnace pathways. These are then utilized in various battery types, electroplating and electrolysis, welding, cathodic protection, membrane electrode assembly, chemical analysis, and electroshock weapons. The lithium-ion battery segment, simultaneously, would exhibit the fastest CAGR of 11.1% from 2022 to 2031.

Key Market Segments:

- Steel Production: The demand for needle coke is closely tied to the steel industry's health. As steel production increases, so does the demand for needle coke.
- Electric Vehicles (EVs): The growing popularity of electric vehicles and renewable energy technologies has increased the demand for lithium-ion batteries, which require high-quality needle coke for their anodes.
- Environmental Regulations: Stringent environmental regulations in many regions can impact the production of needle coke due to emissions associated with the coking process.
- Supply Chain Challenges: The needle coke industry has historically faced supply chain challenges, including feedstock availability and transportation issues.

The petroleum-based segment contributed to more than two-thirds of the global needle coke market share in 2021, and is expected to lead the trail by 2031. The same segment is also projected to showcase the fastest CAGR of 10.2% from 2022-2031. Rise in supply of heavy oils globally and developments in the cement and power generation industries are anticipated to increase the demand for petroleum coke across the world, thus propelling the segment growth.

Market Players: Several companies dominate the needle coke market, including Phillips 66, C-

Chem Co. Ltd, and Mitsubishi Chemical Corporation. These companies invest heavily in research and development to improve the quality and production efficiency of needle coke.

Environmental Implications: The production of needle coke can have environmental implications, mainly due to the release of greenhouse gases and other pollutants during the coking process. Efforts are being made to develop more environmentally friendly production methods and reduce the environmental footprint of the industry.

The lithium-ion battery segment, simultaneously, would exhibit the fastest CAGR of 11.1% from 2022 to 2031. This is because needle coke, which is widely used as a lithium-ion battery, is employed in products such as electronics, toys, wireless headphones, handheld power tools, small and large appliances, electric vehicles, and electrical energy storage systems.

Price Volatility: Needle coke prices can be highly volatile due to fluctuations in feedstock prices, supply chain disruptions, and changes in demand.

The needle coke industry is a niche but vital sector that serves the steel industry and various other high-tech industries. Its growth and sustainability are closely tied to developments in steel production, the electric vehicle market, and advancements in battery technology. Additionally, addressing environmental concerns and ensuring a stable supply chain are essential challenges for the industry's future.

Asia-Pacific held the major share in 2021, generating nearly three-fifths of the global needle coke market. The same region would also cite the fastest CAGR of 10.7% throughout the forecast period. The growing demand for a high-quality needle for graphite electrode manufacturing along with the significant rise in demand for electric vehicles across the province propel the market growth.

Key Players in the Needle Coke Market-

- 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

For more information on the global needle coke market, visit our website:
<https://www.alliedmarketresearch.com/needle-coke-market/purchase-options>

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