

## **Needle Coke - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029**

Market Report | 2024-02-17 | 150 pages | Mordor Intelligence

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### **Report description:**

The Needle Coke Market size is estimated at 2.14 Million metric tons in 2024, and is expected to reach 3.79 Million metric tons by 2029, growing at a CAGR of 12.07% during the forecast period (2024-2029).

The COVID-19 pandemic negatively impacted the needle coke market. During the pandemic, the manufacturing of graphite electrodes was heavily impacted due to less demand from the steel manufacturing plants, which reduced the consumption of needle coke. After 2020, the market expanded steadily because of the continuous manufacturing of graphite electrodes.

#### **Key Highlights**

- Over the short term, the major factors driving the growth of the market studied are the increasing investments in EAF steel manufacturing and the government policies to increase scrap steel consumption.
- On the flip side, health hazards associated with petroleum coke act as a roadblock to the growth of the needed (petroleum-based) coke market.
- An increase in lithium-ion battery production globally is likely to act as an opportunity for the market studied during the forecast period.
- Asia-Pacific region is expected to dominate the market and is also likely to witness the highest CAGR during the forecast period.

#### **Needle Coke Market Trends**

Graphite Electrodes Segment to Dominate the Market

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- Needle coke is a high-quality carbon raw material that is produced from coal tar and petroleum. It is a premium grade, high-value petroleum coke used in the manufacturing of graphite electrodes of very low coefficient of thermal expansion (CTE) for the electric arc furnaces in the steel industry.
- The graphite electrodes are primarily used in electric arc furnace steel manufacturing, alloy steel, various alloys, and nonmetals melting. Furthermore, graphite has high thermal conductivity and is very resistant to heat and impact. It also has low electrical resistance, which is needed to conduct the large electrical currents necessary to melt iron. Thus, it can sustain sustaining the extremely high levels of heat generated in EAF (Electric Arc Furnace).
- The increase in crude steel and aluminum production is expected to drive the usage of graphite electrodes, which in turn is expected to favor the demand for needle coke. However, irregular trends in the production of these metals are expected to cause uncertainty in market demand.
- In April 2023, the World Steel Association released its Short-Range Outlook (SRO) steel demand forecast for 2023 and 2024, which stated that the steel demand would see a 2.3% rebound to reach 1,822.3 Mt in 2023, and it is forecasted to grow by 1.7% in 2024 to reach 1,854.0 Mt. In addition, the total world crude steel production was 1,878.5 Mt in 2022, a 4.2% decrease as compared to the value in the previous year.
- China is the largest producer of graphite electrodes. The country accounted for more than 60% of the global graphite electrode production. Furthermore, owing to the largest steel industry, China is also the largest consumer of graphite electrodes. Over the past few years, graphite electrodes witnessed a significant rise in prices.
- According to the Bureau of International Recycling, in China, approximately 226.2 million tons of steel scrap were used for recycling purposes for the steel manufacturing process. In addition, the rising availability of steel scrap in China shows the increasing consumption of needle coke used for graphite electrode manufacturing.
- United States Steel Corporation has started to explore new locations for electric arc furnaces (EAF) to produce advanced grades of steel, which will cost approximately USD 3 billion. This trend is expected to support the studied market.
- However, the European Steel Association (EUROFER) has adjusted its forecast for the consumption of steel products in the European Union in 2022. In comparison to the February 2022 forecast and the expectation of regional metal consumption growth of 3.2%, there is a decline of around 1.9% expected by the association.
- According to the International Aluminum Institute, global aluminum production rose by a marginal 2.0% in 2022 compared to a growth rate that was down from 2.7% in 2021 and the slowest since 2019.
- The above-mentioned factors are likely to affect the demand for needle coke for graphite electrode application during the forecast period.

#### Asia Pacific region to Dominate the Market

- The Asia-Pacific region is expected to dominate the needle coke market as the region has countries such as China (the biggest producer and consumer of needle coke) and Japan.
- China holds the largest share in terms of consumption and production capacity of graphite electrodes in the global scenario, thus presenting the scope for steel production in the country. At present, there are more than 40 official graphite electrode producers in China, with 30 new entrants that have made other refractory products, along with electrodes, added to the market in the past 2-3 years.
- In addition to this, the Chinese government is also focusing on developing eco-friendly means of producing steel. Several hundred thousand metric tons of new capacity electric arc furnace is already in the pipeline.
- Japan is one of the leading producers and exporters of petroleum, coal, and tar-based pitch needle coke. Japanese companies are one of the largest producers of graphite electrodes in the world. The market giants of graphite electrodes include Showa Denko, Nippon Carbon, SEC Carbon, and Tokai Carbon.
- Japan UPS demand is fueled by the rising demand for high-rated power supply from data centers, coupled with rising

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technological developments in the country. The increase in demand for heavy-energy storage batteries to store solar power is expected to drive the market for lithium-ion batteries in the country.

- In March 2022, Panasonic Corporation announced its intention to invest in the establishment of a facility at its Wkayama Factory, which will be dedicated to the manufacturing of the new '4680' lithium-ion batteries for the electric vehicle market. The production at the planned facility is slated to begin by March 2024.

- India is the second-largest producer of steel globally. According to World Steel Association data, the crude steel production in India rose by around 5.80% to 124.4 million tons (MT) in 2022, as compared to 118.2 MT in 2021. The country accounts for around 4.8% of the global production of steel every year.

- In November 2022, HEG Ltd announced that it set up a new manufacturing facility for a graphite electrode for lithium-ion batteries in the next three years in India.

- Hence, the Asia-Pacific region is expected to dominate the global market based on the above mentioned aspects.

## Needle Coke Industry Overview

The needle coke market is consolidated in nature. Some of the major players in the market (not in any particular order) include Phillips 66 Company, Liaoning Baolai Bioenergy Co. Ltd, China National Petroleum Corporation (CNPC), Shandong Yida Rongtong Trading Co., and Shandong Jing Yang Technology Co. Ltd.

### Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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