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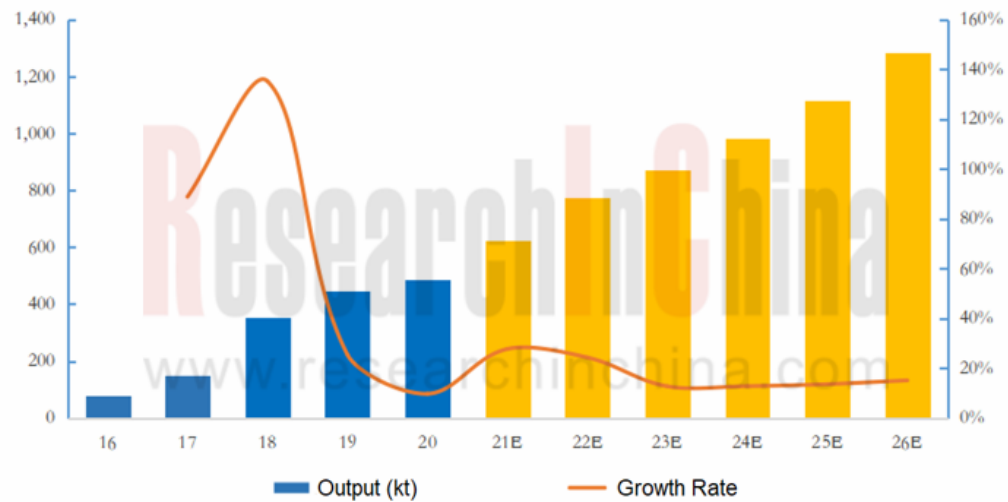
# Global and China Needle Coke Industry Report, 2021-2026

July 2021

Needle coke is an important carbon material, featuring a low thermal expansion coefficient, a low electrical resistivity, and strong thermal shock resistance and oxidation resistance. It is suitable for the preparation of special carbon materials and their composite materials as well as ultra-high-power electrodes. With environmental protection supervision and supply-side reforms, the demand for electric furnace steelmaking has accelerated, which has promoted the demand for needle coke used for ultra-high-power and high-power graphite electrodes. In recent years, the demand for artificial graphite anodes used for lithium-ion power batteries has increased year by year, further boosting the demand for needle coke. In 2020, China's total needle coke capacity hit 1490kt, and the total output decreased 36% year-on-year to 488kt.

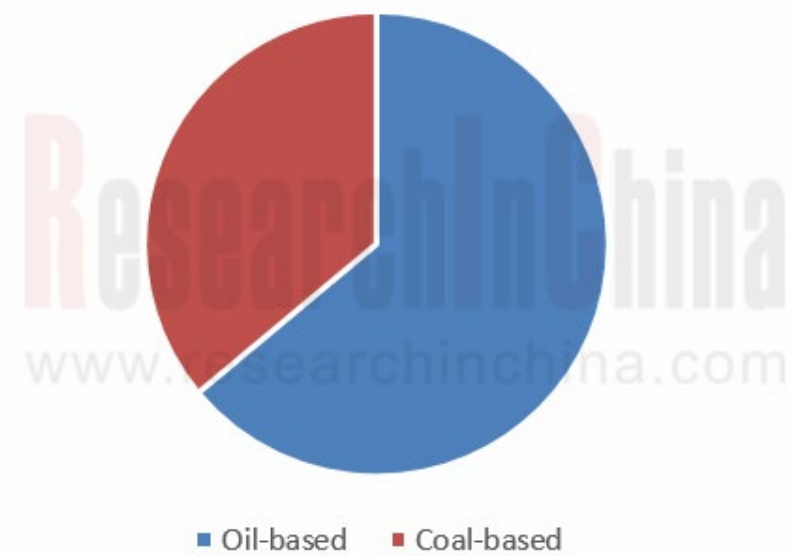
By raw materials, needle coke falls into the coal-based type and the oil-based type, of which the former refers to the production with coal tar, pitch and their important fractions used as the raw materials, and the latter takes heavy oil to produce needle coke. In 2020, China's annual oil-based needle coke capacity jumped 102% year-on-year to 690kt, and the coal-based needle coke capacity rose 23% year-on-year to 800kt. In the same year, the output of coal-based and oil-based needle coke was 312kt and 176kt respectively.

China's Needle Coke Output and Growth Rate, 2016-2026E



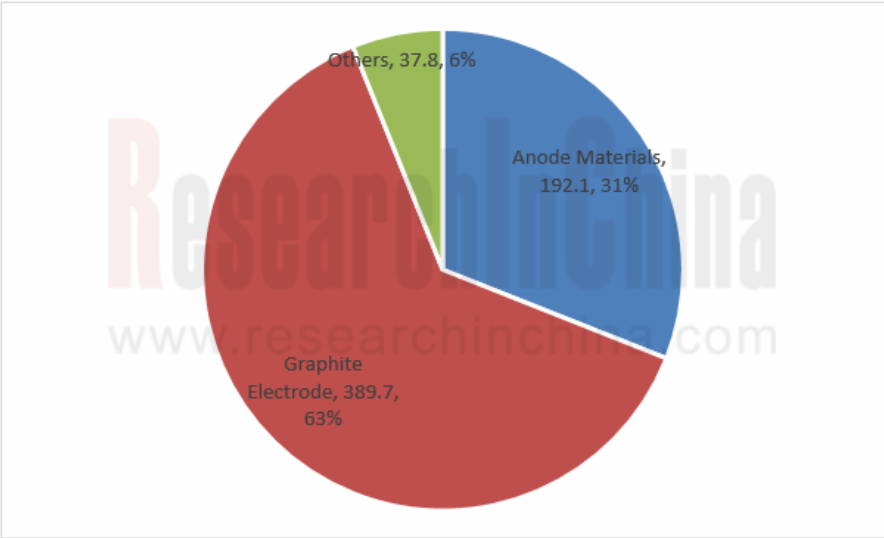
Source: Global and China Needle Coke Industry Report, 2021-2026

China's Needle Coke Output by Type, 2020 (kt)



Needle coke is the most widely used on graphite electrodes. In China, the world's largest steel & iron producer, the demand for needle coke has escalated thanks to the continuously optimized product structure in the graphite electrode industry where the proportion of ultra-high-power graphite electrodes has swelled. Lithium battery anode materials are the second largest application field where the demand has been relatively stable with an upward trend in recent years.

Global Graphene Application Market Distribution, 2020



Some Chinese Needle Coke Manufacturers

Enterprises	Production Process
CNPC Jinzhou Petrochemical Co., Ltd.	Oil-based
Shandong Jingyang Technology Co., Ltd.	Oil-based
Shandong Yida New Material Co., Ltd.	Oil-based
Fangda Xikemo (Jiangsu) Needle Coke Technology Co., Ltd.	Coal-based
Shanxi Hongte Coal Chemical Industry Co., Ltd.	Coal-based
Baotailong New Materials Co., Ltd.	Coal-based
Baowu Carbon Material Technology Co., Ltd.	Coal-based
Anshan Kaitan Thermal New Material Co., Ltd.	Coal-based
Shanxi Jinzhou Chemical Industry Co., Ltd.	Coal-based
MA STEEL & Jinghua Carbon	Coal-based
Pingdingshan Risun Xingyu New Material Co., Ltd.	Coal-based
Zaozhuang Zhenxing Carbon Material Technology	Coal-based
TSDR New Energy	Coal-based

In terms of the competitive landscape, foreign needle coke producers are mainly concentrated in the United States, the United Kingdom, Japan and other countries. By needle coke capacity, the top five companies include Phillips 66 UK, Phillips 66 US, the US-based Seadrift Coke L.P., Japan-based ENEOS, etc. China's needle coke production has just developed rapidly in the past 10 years, with the designed capacity of more than 600kt/a on the completed needle coke production equipment. However, process technology, environmental protection and limited production of downstream products such as graphite electrodes lead to the low operating rate and capacity utilization rate of the equipment.

Global and China Needle Coke Industry Report, 2021-2026 highlights the following:

- Definition, classification, technical status, development history, industrial chain, etc. of needle coke;
- Global needle coke supply and demand, technology, competitive landscape, etc.;
- Development environment, supply and demand, competitive landscape, import and export, etc. of China's needle coke industry;
- Production, demand and market structure of main needle coke downstream industries (graphite electrodes);
- Operation, revenue structure, needle coke business, etc. of 7 global and 15 Chinese needle coke companies.

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