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**Global and China Needle Coke Industry  
Report, 2022-2027**  
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Needle coke that features low resistivity and strong resistance to impact and oxidation has found broad application in ultra-high-power graphite electrodes, nuclear reactor moderating materials and lithium battery anode materials among others. In recent years, the boom of new energy vehicles and the increase of electric furnace equipment, a result of China government's greater efforts to make use of steel scraps have given a big boost to the demand for needle coke and the production. China's needle coke production capacity was expanded from 160 kt/a in 2014 to 2,180 kt/a in 2021, and the production multiplied from 80 kt in 2016 to 762 kt in 2021. The global and Chinese new energy vehicle industries will still gain momentum in the next five years. China's benign resource recycling policies will continue to expedite the development of electric furnace equipment. It is conceivable that China will produce 3,458 kt needle coke in 2027, sustaining CAGRs of 28.7% during 2021-2027.

Needle coke falls into coal-based and petroleum-based types. Needle coke made from petroleum residue is petroleum-based needle coke; that produced from coal tar pitch and fractions is coal-based needle coke. European and American producers concentrate on producing petroleum-based needle coke, while their Asian peers are engaged in coal-based needle coke. The constrained supply of raw materials brought about the rapid development of coal-based needle coke in China in recent years. In 2021, China's coal-based needle coke capacity reached 1,000kt/a, and the output was 261 kt; the petroleum-based needle coke capacity was 1,180 kt/a, and the output was 501 kt.

China's Needle Coke Output and Growth Rate, 2017-2027E



# Distribution of New Needle Coke Capacity in China by Enterprise, 2022

Distribution of New Needle Choke Capacity in China by Enterprise, 2022

Company	Type	Status Quo	Capacity	Remark
<b>Shaanxi Coal and Chemical Industry Group Shenmu Tianyuan Chemical Industry Co., Ltd.</b>	Coal-based	New capacity	120	Produced green coke in early January, and now suspend production and sales
<b>Liaocheng Zhonghe Energy Technology Co., Ltd.</b>	Petroleum-based	New capacity	70	It was constructed in late October 2021 and put into production in April 2022
<b>Shandong Henqin New Materials Co., Ltd.</b>	Coal-based	New capacity	100	The Phase I with capacity of 50kt/a became operational on May 13, 2022
<b>Hebei Jicheng New Materials Co., Ltd.</b>	Coal-based	New capacity, under construction	50	Went into production in 2022Q2
<b>Shanxi Yongxin Coal Coking Co., Ltd.</b>	Coal-based	New capacity, under construction	12	To be put into production by the end of 2022
<b>PetroChina Jinzhou Petrochemical Company</b>	Petroleum-based	Capacity expansion, under construction	200	To be constructed and put into operation in late 2022 (Phase III).
<b>Shanxi Fuma Carbon Material Technology Co., Ltd.</b>	Coal-based	New capacity, under construction	40	It was constructed in late 2021, and scheduled to go into operation in late 2022
<b>Liaoning Baolai Bioenergy Co., Ltd.</b>	Petroleum-based	Capacity expansion, under construction	140	It was constructed in October 2021 (Phase III); the production date is uncertain
<b>Wuhai Baohua Wanchen Coal Chemical Industry Co., Ltd.</b>	Coal-based	New capacity, under construction	50	To be put into production in late 2022 (Inner Mongolia project).
<b>Shanxi Yongdong Chemical Industry Co., Ltd.</b>	Coal-based	New capacity, under construction	40	To be put into production by the end of 2022

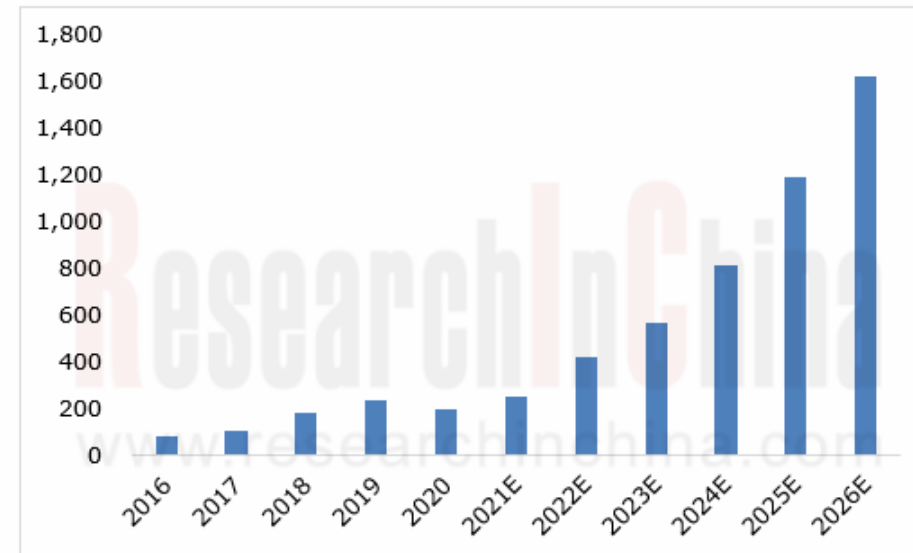
Source: BAIINFO, ResearchInChina

# Demand for Needle Coke Used in Lithium Battery Anode Materials in China

In terms of competitive landscape, global needle coke producers cluster in the US, Japan and China. Among them, Phillips 66, a spin-off from ConocoPhillips, is the world's largest producer of petroleum-based needle coke, with production capacity of about 450 kt/a; Shandong Yida New Material Co., Ltd. and Shandong Jingyang Technology Co., Ltd. have seen surging capacity in recent years, each with 180 kt/a, tied for the second largest needle coke producer in the world; Shanxi Hongte Coal Chemical Industry Co., Ltd. and Shandong Yiwei New Materials Co., Ltd. surpassed Nippon Steel Chemical (formerly C-Chem) and became the world's largest (joint) coal-based needle coke producer, with capacity of 150 kt/a. In addition to the above-mentioned producers, other Chinese players have also increased their investments in recent years. The capacity of Tangshan Dongri New Energy Materials Co., Ltd., Zaozhuang Zhenxing Carbon Material Technology Co., Ltd., and Kaifeng Pingmei New Carbon Materials Technology Co., Ltd. and more has increased significantly in recent years.

Needle coke, the main raw material for lithium battery anode materials, is greatly affected by the demand for lithium batteries. In 2020, the demand for needle coke for anode materials in China reached 190 kt, a figure projected to hit 1,900 kt in 2026.

**Demand for Needle Coke Used in Lithium Battery Anode Materials in China, 2016-2026E**



	2016	2017	2018	2019	2020	2021	2022E	2023E	2024E	2025E	2026E	2027E
<b>Demand (kt)</b>	83	106	182	230	192	355	563	801	1,121	1,497	1,952	2,492

Source: ResearchInChina

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## Beijing Headquarters

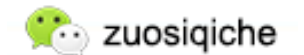
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