Activated Carbon: Types and Global Markets

Market Research Report | 2025-02-21 | 159 pages | BCC Research

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Report description:

Description

Report Scope
This report provides a detailed market analysis of activated carbon types and global markets to reflect the latest data and trends. The global activated carbon market determines segments by type [powdered activated carbon, granular activated carbon and others (extruded/pellet-shaped, biochar, surface treated)], feedstock material [wood and coal, coconut shell and others (peat, sawdust)], application [water treatment, air purification, food processing, mercury removal, medical and pharmaceutical, mining and others (natural gas purification, chemical treatment, electronics)] and region [North America, Europe, Asia-Pacific and Rest of the World (South America and Middle East and Africa (MEA)]. The base year for this study is 2023 and the estimates and forecast outlook are for 2024 through 2029.
Market estimates are in volume (Kilo tons) and value in U.S. dollars (millions). Product prices were obtained using actual quotes provided by leading worldwide suppliers. Forecast growth rates are based on expected capacity additions across the industry, feedback received from key industry players, revenue reported by major companies and anticipated regulatory updates. The market size includes the revenue activated carbon-producing companies generate by incorporating industrial-scale technologies.
Report Includes
- 72 data tables and 55 additional tables
- In-depth analyses of the global market trends for activated carbon, with historic revenue data for 2023, estimates for 2024, and projected CAGRs through 2029
- Estimates of the size and growth forecasts of the global market both in revenue and volume terms, and a corresponding market share analysis by product type, application, feedstock material, and region
- Facts and figures pertaining to the market dynamics, technical advances, regulations and the impact of macroeconomic factors
- Insights derived from the Porter's Five Forces model, as well as global supply chain and PESTLE analyses
- An analysis of patents, emerging trends and developments in the industry
- A look at the upcoming technologies in activated carbon currently being used or with future commercial potential

- Analysis of the industry structure, including companies' market shares and rankings, strategic alliances, M&A activity and a venture funding outlook
- Overview of sustainability trends and ESG developments, with emphasis on consumer attitudes, and the ESG scores and practices of leading companies
- Company profiles, including Kuraray Co. Ltd., Jacobi Carbons Group, Evoqua Water Technologies, Ingevity, and Haycarb PLC

Executive Summary

Summary:

The global market for activated carbon is expected to grow from $6.6 billion in 2024 and is projected to reach $10.2 billion by the end of 2029, at a compound annual growth rate (CAGR) of 9.3% during the forecast period of 2024 to 2029.

Activated carbon is a porous substance produced from carbon-rich organic materials, such as wood, coal, coconut shells and lignin, that uses adsorption techniques to trap organic compounds from liquids and gases. When a liquid or gas passes through the activated carbon's pores, organic molecules in the liquid or gas are drawn to the surface and attached. Its structure comprises graphitic plates linked through a carbon-carbon bond, which gives an extensive internal surface area and produces a porous structure that facilitates adsorption. The surface area of activated carbon can vary from 480 m2/g to 3500 m2/g, depending on the components and activation techniques. Activated carbon is a versatile
material used in various industries, including water treatment, air and gas purification, food processing and mercury removal.

Activated carbon is a key material for addressing environmental challenges. Its ability to remove pollutants from air, water and industrial emissions makes it essential for sustainable development and compliance with environmental regulations. Growing legislation related to restoring and protecting the environment is a key proponent of demand for activated carbon. It is used extensively in an array of applications that work toward a cleaner environment. A major advantage of activated carbon is that it can be regenerated so that the adsorbed components can be desorbed from the activated carbon, yielding fresh activated carbon that can be reused. In addition, the demand for activated carbon is also being driven by the U.S. Environmental Protection Agency's stage 1 and stage 2 Disinfectants and Disinfection Byproducts Rule, which limits the amount of chemicals that can be present in drinking water.

The industrial sector significantly contributes to global mercury emissions, with coal-fired power stations, non-ferrous metal smelting and refining, waste incineration and cement kilns being the most significant sources. The U.S. Environmental Protection Agency's (EPA) Mercury and Air Toxics Standards (MATS), part of the Clean Air Act, have established limits on the levels of mercury and other pollutants these power plants are permitted to release. In this case, activated carbon injection is a successful strategy for reducing mercury emissions. Activated carbon is gaining popularity in the automotive sector to lower hydrocarbon emissions. Industry employs activated carbon canisters in automobile air filters to capture volatile organic compounds (VOCs), pollutants and odor.

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ASBURY CARBONS
BASF
BOYCE CARBON
CARBON ACTIVATED CORP.

CARBOTECH
CPL/PURAGEN ACTIVATED CARBONS
EVOQUA WATER TECHNOLOGIES LLC.
HAYCARB PLC.
ILUKA RESOURCES LTD.
INGEVITY
JACOBI CARBONS GROUP
KURARAY CO. LTD.
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