

Global Activated Carbon Market 2023

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Abstracts

Description

Activated carbon is a specialized form of carbon produced through thermal decomposition of carbon-based raw materials, such as coal, coconut shells, wood and nutshells. This pyrolytic process alters the material's molecular structure, inducing small microporous openings throughout its surface that vastly multiply the total surface area available for molecular adsorption or catalytic reactions.

These highly porous characteristics grant activated carbon synonymous efficacy in a diversity of water purification, odor removal and industrial pollution control applications. Municipal drinking water facilities and sewage treatment operations extensively utilize granulated activated carbon to remove dissolved contaminants and impurities through absorption.

Liquid and gas phase vapor control across numerous manufacturing sectors further relies on activated carbon filters. Its non-reactive structure proves able to trap low molecular weight toxins, pigments and foul odors without chemical alteration. Such versatile pollution scrubbing utilities have entrenched activated carbon as a staple processing commodity on a global scale.

Recent research projections anticipate the total market value of activated carbon to expand by approximately \$942 million USD through 2029. A compound annual growth rate averaging 3.4% over the forecast period points to meaningful prospects of rising demand momentum.

Underlying drivers center around intensifying needs for advanced pollution remediation measures proportional to escalating industrial activity and urbanization trends concentrated in developing regions. Chiefly, water treatment and purified discharge

requirements are anticipated to spike as human and industrial waste volumes mount amid population booms challenging traditional waste handling infrastructure.

Market Segmentation

This comprehensive industry report provides market estimates and forecasts, accompanied by a detailed examination of the product, feedstock material, application, and region aspects. It delivers a quantitative analysis of the market, empowering stakeholders to leverage existing market opportunities. Furthermore, the report identifies key segments for potential opportunities and strategies, drawing insights from market trends and the approaches of leading competitors.

- Product: extruded activated carbon, granular activated carbon, powder activated carbon, others
- Feedstock material: coconut shell, wood and coal, others
- Application: air purification, automotive, catalysts, chemicals, food and beverages, mining, pharmaceuticals, water and wastewater treatment, others
- Region: Asia-Pacific, Europe, North America, Rest of the World (RoW)

Analysis of the activated carbon market by end use indicates water treatment as the dominant application segment in 2022, commanding over 30% of total revenues. Activated carbon has cemented its role as a premier adsorptive medium for purifying aqueous streams.

Both its powdered and granulated forms effectively remove a wide scope of organic and inorganic contaminants, odors, tastes and dissolved compounds from supply sources. Regulatory bodies worldwide have increasingly mandated optimized water treatment and recycling practices among industrial facilities to minimize processing waste discharge.

Against this backdrop, uptake of advanced carbon-based filtration solutions is accelerating. Continuous technological refinement now enables tighter contaminant sieving from ever-diluter feedwater. Multi-media vertical towers amalgamate activated carbon with other media like sand for comprehensive contaminant interception prior to potable reuse or aquifer recharge.

Meanwhile, following closely in market share is air purification end use, driven by the confluence of economic development and public health priorities. As developing regions urbanize at unprecedented rates with attendant air quality downsides, consumers demonstrate a heightened willingness to invest in residential and commercial air handling equipment. Activated carbon impregnated into HVAC filters removes gaseous impurities and allergens, bolstering installations among those newly empowered by expanding middle classes. Technological upgrades including IoT connectivity and “smart” sensor functions are likewise enhancing user appeal.

Regional segmentation of the activated carbon market identifies Asia Pacific as the dominant sector in 2022, accounting for over 40% of total revenues. Water treatment remains the principal application driving uptake within the vast Asia Pacific bloc characterized by intensifying industrialization and infrastructure development. Access provisions for safe, potable water are being upscaled to accommodate expanding urban populations struggling with legacy pollution issues. Activated carbon adsorptive media are integral to advanced filtration systems enabling large-scale water reclamation from even dilute feedstock.

Concurrently, burgeoning consumer spending on appliances designed to ameliorate poor air quality woes has spurred carbon-based residential and commercial air purification solutions throughout the region's rapidly developing markets. Manufacturers accordingly scale distribution and tailored product variant development to engaged regional audiences.

Mercury removal from industrial flue gases represents the fastest growing application segment. As coal reserves power economic ascension, mercury emission controls have become paramount in Asia to mitigate contamination ramifications. Investments heavily target optimized scrubbing for liquefied natural gas export terminals as well given the segment's lucrative long-term promise within the regional energy transition.

Regulatory environments supportive of sustainable natural resource consumption likewise augur healthy medium-term prospects. China, Indonesia, India and other major Asian economies have codified stringent wastewater treatment and atmospheric discharge limits spurring activated carbon infrastructure upgrades across power, mining and manufacturing industries integral to their development blueprints.

Major Companies and Competitive Landscape

The report explores the recent developments and profiles of key vendors in the Global

Activated Carbon Market, including Activated Carbon Technologies Pty Ltd. (ACT), Advanced Emissions Solutions, Inc., Asbury Carbons Inc., Cabot Corporation, Calgon Carbon Corporation, Carbon Activated Corporation, CarboTech GmbH, Chengde Hongwei Activated Carbon Co., Ltd., Clarimex, S.A. de C.V., CPL Activated Carbons Limited, Datong Coal Jinding Activated Carbon Co., Ltd., DESOTEC NV, Donau Chemie AG, Evoqua Water Technologies LLC (Xylem Inc.), Fujian Xinsen Carbon Co., Ltd., Fujian Yuanli Active Carbon Co., Ltd., Haycarb PLC, Ingevity Corporation, Kuraray Co., Ltd., Kureha Corporation, Ningxia Huahui Environmental Protection Technology Co., Ltd., Osaka Gas Co., Ltd., Zhejiang Minxin Ecological Technology Co., Ltd., among others. In this report, key players and their strategies are thoroughly analyzed to understand the competitive outlook of the market.

Scope of the Report

To analyze and forecast the market size of the global activated carbon market.

To classify and forecast the global activated carbon market based on product, feedstock material, application, region.

To identify drivers and challenges for the global activated carbon market.

To examine competitive developments such as mergers & acquisitions, agreements, collaborations and partnerships, etc., in the global activated carbon market.

To identify and analyze the profile of leading players operating in the global activated carbon market.

Why Choose This Report

Gain a reliable outlook of the global activated carbon market forecasts from 2023 to 2029 across scenarios.

Identify growth segments for investment.

Stay ahead of competitors through company profiles and market data.

The market estimate for ease of analysis across scenarios in Excel format.

Strategy consulting and research support for three months.

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