

# Activated Carbon Market Expanding at a Healthy 6.35% CAGR | Industry Analysis by Future Demand and Forecast up to 2035

*The Activated Carbon Market CAGR (growth rate) is expected to be around 6.35% during the forecast period (2025 - 2035)*

NEW YORK, NY, UNITED STATES, August 6, 2025 /EINPresswire.com/ -- Activated carbon, also known as activated charcoal, is a highly porous material that is widely used across numerous industries for its ability to absorb and filter a variety of substances. This form of carbon is created through a process that involves heating carbon-rich materials such as wood, coal, or coconut shells in the presence of gases that result in a high surface area. Activated carbon's remarkable adsorption properties make it invaluable for a wide range of applications, from air and water purification to medical treatments and industrial processes.



Activated Carbon

The [Activated Carbon Market](#) was valued at 3.58 USD Billion in 2023 and is projected to reach 7.5 USD Billion by 2035, growing at a CAGR of 6.35% from 2025 to 2035.

## Properties of Activated Carbon

Activated carbon's unique properties stem from its extensive surface area, which can range from 500 to 1500 square meters per gram, depending on the material and activation process used. This large surface area allows activated carbon to adsorb a vast array of molecules, including gases, liquids, and solids. Unlike absorption, where substances are soaked into the material, adsorption refers to the accumulation of molecules on the surface, making activated carbon highly effective at trapping impurities.

The material is created by heating carbon-rich substances like coconut shells, peat, coal, or wood to extremely high temperatures (800°C to 1,200°C) in the presence of an oxidizing agent such as steam or air. This process opens up the structure of the carbon, creating an intricate network of tiny pores that significantly increase its surface area.

Activated carbon is typically available in various forms such as granules, powders, and pellets, each suited for specific applications. Powdered activated carbon (PAC) is used primarily for liquid-phase adsorption, while granular activated carbon (GAC) is employed for both liquid and gas-phase filtration.

## Applications of Activated Carbon

### 1. Water Purification

One of the most common uses of activated carbon is in water treatment. Activated carbon filters are used extensively in municipal water purification systems, as well as in home water filtration systems, to remove impurities such as chlorine, volatile organic compounds (VOCs), pesticides, and heavy metals like lead and [mercury](#). The high surface area of activated carbon allows it to trap these pollutants efficiently, improving the taste, odor, and overall quality of the water.

In wastewater treatment, activated carbon is also used to remove contaminants from industrial discharges, helping to meet environmental regulations. The material is particularly effective in removing organic pollutants that are difficult to treat using conventional methods.

### 2. Air and Gas Purification

Activated carbon's ability to adsorb gases makes it an essential component in air and gas purification. It is commonly used in air filtration systems to remove odors, chemicals, and volatile organic compounds (VOCs) that can be harmful to human health. Activated carbon is used in household air purifiers, gas masks, and industrial air cleaning systems to ensure clean, breathable air.

In industrial applications, activated carbon is used to remove toxic gases such as [ammonia](#), hydrogen sulfide, and other volatile compounds produced during chemical processes. It is also used in controlling emissions from power plants, refineries, and other industries that release harmful gases into the atmosphere.

### 3. Medical Uses

Activated carbon is also widely used in the medical field, primarily in the treatment of poisoning and overdoses. When ingested, activated carbon can absorb toxins and prevent them from being absorbed by the gastrointestinal tract. This makes it an important tool in emergency medicine for the treatment of various types of poisoning, including those caused by drugs, chemicals, and pesticides.

In addition to its role in treating poisoning, activated carbon is sometimes used in other medical

applications, such as wound care and skin treatments. Activated carbon has been used in wound dressings to help absorb fluids and prevent infection, and it is also used in some skincare products for its detoxifying properties.

#### 4. Industrial Processes

Activated carbon plays a vital role in several industrial processes. It is used in the production of chemicals, pharmaceuticals, and food products, particularly in the removal of impurities during manufacturing. In the food and beverage industry, activated carbon is employed to decolorize and purify products like sugar, juices, and oils.

In the oil and gas industry, activated carbon is used to purify hydrocarbon streams and remove impurities such as sulfur compounds. It is also used in the gas phase for capturing volatile organic compounds in the production of synthetic materials, including plastics and rubber.

#### 5. Environmental Cleanup

Activated carbon is a crucial tool in environmental cleanup efforts, particularly in the treatment of contaminated soil and groundwater. Due to its ability to adsorb a wide range of organic and inorganic pollutants, it is commonly used in the cleanup of oil spills, chemical leaks, and other environmental disasters. In these situations, activated carbon is used to absorb and remove harmful contaminants from the environment, preventing further damage to ecosystems and human populations.

Activated carbon is also used in the remediation of contaminated groundwater, where it adsorbs pollutants such as pesticides, solvents, and other toxic substances. In many cases, the material is placed in the affected groundwater and allows for the removal of contaminants through filtration or absorption.

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#### Benefits of Activated Carbon

The benefits of activated carbon are numerous, making it an essential material in a wide variety of industries. Some of the most notable advantages include:

**High adsorption capacity:** Activated carbon's ability to adsorb a large number of substances on its surface makes it highly effective in removing contaminants from water, air, and gases.

**Versatility:** Activated carbon is used in a wide range of applications, from water purification to air filtration, medical treatments, and industrial processes.

**Non-toxic and safe:** Activated carbon is non-toxic and safe for use in various applications, including medical treatments and food production. It does not release harmful substances into the environment when used correctly.

**Cost-effective:** Compared to many other filtration materials, activated carbon is relatively inexpensive and can be regenerated and reused multiple times, making it a cost-effective solution for many applications.

**Environmental benefits:** By removing harmful pollutants from water, air, and soil, activated carbon plays a significant role in environmental protection and sustainability.

#### Key Companies in the Activated Carbon Market Include

Kuraray Co Ltd  
Carbon Resources LLC  
Carbotech AC GmbH  
Ingevity Corporation  
SABIC  
Chongqing Yuanlian  
Haycarb PLC  
Silcarbon Aktivkohle GmbH  
Calgon Carbon Corporation  
Cabot Corporation  
3M Company  
Advent Environmental  
Activated Carbon Technologies  
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Activated carbon is a highly versatile and effective material with a wide range of applications across various industries. Its ability to adsorb toxins, impurities, and contaminants makes it indispensable in water treatment, air purification, medical treatments, and environmental cleanup efforts. As industries continue to evolve and environmental regulations become more stringent, the demand for activated carbon will likely grow, solidifying its position as a critical material in both industrial and environmental applications. Whether in everyday household air purifiers or large-scale industrial processes, activated carbon continues to play a vital role in improving the quality of life and protecting the environment.

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