

Commercially Available of Activated Carbo

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Abstract

Activated carbon is an important porous adsorbent widely used in water purification, wastewater treatment, air pollution control, food processing, pharmaceutical industries, and chemical applications. The commercial availability of activated carbon has increased considerably because of its high adsorption capacity, extensive surface area, and effectiveness in removing a wide range of organic and inorganic contaminants. Commercial activated carbon is manufactured from various carbonaceous materials such as coal, wood, coconut shells, peat, and agricultural wastes. Depending on the method of activation and intended application, it is commonly available in powdered activated carbon (PAC), granular activated carbon (GAC), and pelletized forms. The physicochemical characteristics of these products, including surface area, pore structure, particle size, moisture content, ash content, and adsorption capacity, determine their suitability for specific applications. This study reviews commercially available activated carbon with particular emphasis on its raw materials, production methods, physical forms, properties, applications, and quality parameters. The study also examines the growing use of agricultural and biomass residues as sustainable alternatives for producing activated carbon. Such materials can reduce production costs while contributing to waste utilization and environmental sustainability. The increasing demand for clean water, industrial wastewater management, and pollution-control technologies has further strengthened the commercial importance of activated carbon. Overall, commercially available activated carbon provides an efficient and versatile adsorption material with significant applications in environmental protection and industrial processes.

Keywords: Activated Carbon, Commercial Activated Carbon, Adsorption, Powdered Activated Carbon, Granular Activated Carbon, Water Treatment, Wastewater Treatment, Biomass, Adsorbent, Environmental Applications.

