

# **Systematic Approach to Quantify Adsorption and Biodegradation Capacities on Biological Activated Carbon following Ozonation**

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摘要

## **Abstract**

The goal this research was to develop a systematic approach to quantify adsorption and biodegradation capacities on biological activated carbon (BAC). The role of adsorption and biodegradation on BAC was studied using a continuous column. Several media, i.e., granular activated carbon (GAC), seeded glass bead and seeded GAC, and a target compound (p-hydroxybenzoic acid) were selected. Before breakthrough, the effluent of the GAC column contained a small amount of p-hydroxybenzoic acid that contributed the greatest amount of organic carbon to the effluent of the glass bead column, which suggests that adsorption should be the prevailing mechanism for removal of the p-hydroxybenzoic acid, and biodegradation should be responsible for reducing the ozonation intermediates. Also, the bioactivity approach (biomass respiration potential, BRP) of BAC can not only reveal the importance of biodegradation mechanisms for the intermediates of ozonation, but also quantify the extent of the adsorption or biodegradation reaction occurring on BAC.