

环境科学

首页 | 本刊简介 | 编委会 | 稿约信息 | 订阅指南 | 即将发表 | 联系我们 | 会议通知

臭氧-生物活性炭对南方河网典型污染物的去除特性

摘要点击 222 全文点击 88 投稿时间: 2008/6/10 最后修改时间: 2008/8/27

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

中文关键词 [臭氧-生物活性炭](#) [分子量](#) [河网水源](#) [溴酸盐](#) [三卤甲烷 \(THMs\)](#)

英文关键词 [ozone-biological activated carbon](#); [molecular weight](#); [water source of brooky regions](#) ; [bromate](#); [trihalomethanes](#)

作者	单位
林涛	河海大学浅水湖泊综合治理与资源开发教育部重点实验室, 南京210098
陈卫	河海大学环境科学与工程学院, 南京210098
王磊磊	河海大学环境科学与工程学院, 南京210098

中文摘要

以我国南方河网原水中有有机物和季节性溴化物(Br^-)为对象, 研究臭氧-生物活性炭(BAC)工艺净化过程中有机物相对分子质量(M_r)分布变化及溴酸盐(BrO_3^-)和消毒副产物(THMs)的形成规律. 结果表明, 原水中 M_r 在 10^3 以下的有机物(DOC)约占总量的80%, 常规工艺主要表现为对 $M_r > 100 \times 10^3$ 有机物的去除, 出水DOC去除率为8%、SUVA ($\text{UV}_{254}/\text{DOC}$)值下降14%; 臭氧-活性炭工艺主要去除 $10^3 < M_r < 5 \times 10^3$ 的有机物, 但亲水性小分子有机物抑制生物降解作用, 出水DOC去除率仅提高至30%、SUVA值下降31%. 当臭氧投加量高于2 mg/L时, 臭氧氧化出水中 BrO_3^- 增加明显, 氧化过程原水中 Br^- 浓度升高 BrO_3^- 生成量增大; 生物活性炭对 BrO_3^- 的去除率平均仅为13%, 且波动较大. 与常规处理相比, 臭氧-生物活性炭处理后各类THMs均有减少, 总量减少40%; 但氯量和 Br^- 对溴代副产物影响大, 主要为 CHBr_3 生成量增加.

英文摘要

The products of relative molecular weight (M_r) distribution, bromate (BrO_3^-) and trihalomethanes (THMs) were studied by ozone-biological activated carbon (O_3 -BAC) process for treating organic matters and bromide (Br^-) in water source of southern brooky regions of China. The experimental results showed that dissolved organic matters (DOC) with M_r lower than 10^3 accounted for 80% of the total. The removal rate of DOC and SUVA ($\text{UV}_{254}/\text{DOC}$) were 8% and 14% respectively by traditional treatment process with main removal only for ones with M_r higher than 100×10^3 . Only 30% of DOC and 31% of SUVA were decreased by O_3 -BAC process for the removal of ones with M_r between 10^3 and 5×10^3 , in which the biotic degradation was certainly restricted by predominant organic matters of hydrophilic and M_r was lower than 1 000. An obvious increase of BrO_3^- occurred in the effluent from ozone oxidation process when the dose of ozone beyond 2 mg/L which increased Br^- concentration. This could increase the product of BrO_3^- . A poor and unstable removal effect of BrO_3^- was observed in the effluent of BAC process during the experiment. Each species of THMs, decreasing 40% of total, was reduced by O_3 -BAC treatment compared with the traditional treatment process. But the products of brominated trihalomethanes, especially CHBr_3 would be markedly increased by enhanced chlorine dosage and Br^- concentration.

您是第1954232位访客

主办单位: 中国科学院生态环境研究中心 单位地址: 北京市海淀区双清路18号

电话: 010-62941102, 62849343 传真: 010-62849343 邮编: 100085 E-mail: hjx@rcees.ac.cn

本系统由北京勤云科技发展有限公司设计 京ICP备05002858号