臭氧氧化降解微囊藻毒素-LR的动力学研究

Study on the Kinetics of Microcystin-LR Degradation by

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中文摘要

采用臭氧对微囊藻毒素-LR（MC-LR）进行降解试验，研究其反应动力学。取自无锡太湖流域蓝藻藻华提取藻毒素，研究了臭氧用对降解速率的影响。结果表明，臭氧氧化能有效降解MC-LR，且符合准一级动力学反应。降解速率不受MC-LR初始质量浓度的影响。LR的降解速率k由0.0103min-1提高到0.0407min-1。当pH值由3.08升高到10.08时，MC-LR的降解速率k由0.2528min-1降低到0.0099min更大。在阴离子影响方面，NO3-有利于MC-LR的降解，CO32-阻碍降解，SO42-和Cl-对降解速率的影响不明显，其反应速率常数由大到

英文摘要

This paper studies the degradation of microcystin-LR (MC-LR) by ozonation and its kinetics. The microcystins w Lake in Wuxi, China. This thesis investigated the effects of ozone dose, MC-LR initial concentration, pH value and s be effectively degraded by ozonation and the reaction fits well with first-order kinetics. The rate constant (k) is concentrations. When the dosage of ozone changes from 0.31 mg•L-1 to 1.35 mg•L-1, the rate constant increases from C decreases from 0.2528 min-1 to 0.0099 min-1 with pH value from 3.08 to 10.08. Under acidic condition, the degradatic NO3- has positive effect on the degradation of MC-LR while CO32- has negative effect on it, and the effects of SO42- the four anions' effects on the degradation rate of the degradation of MC-LR was NO3-, Cl-, SO42-, CO32-.