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pH冲击对降解五氯酚(PCP)微氧颗粒污泥产气及代谢能力的影响

Effect of pH shock on gas production and metabolism performance of microaerobic granular sludge for PCP degradation

关键词: [pH冲击](#) [五氯酚\(PCP\)](#) [微氧颗粒污泥](#) [产气](#) [代谢](#)

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摘要: 分别在pH为6.0和9.0的冲击条件下,对降解五氯酚(PCP)微氧颗粒污泥系统的产气及代谢能力进行了研究.结果发现,在pH=6.0的条件下冲击8 d,污泥系统的产气量降至 $400 \text{ mL} \cdot \text{d}^{-1}$ 以下,甲烷含量为0.而后将pH调至7.0并经过6 d的恢复实验,产气情况基本恢复正常.而在pH=9.0的冲击下,污泥系统的产气量及甲烷含量急剧下降至0,经过6 d的恢复过程仍然没有达到正常水平.在不同pH冲击的第8 d,对PCP和COD去除率及脱氯中间产物进行了研究,结果表明,PCP及COD降解率均在较低的水平,且发生了PCP及其脱氯中间产物的严重积累.与pH=9.0相比,pH=6.0的冲击对系统代谢的影响要小得多.

Abstract: Gas production and metabolic performance of microaerobic granular sludge system for PCP degradation were studied under the shock of pH 6.0 and 9.0 respectively. At pH 6.0, with eight days of shock, the gas production rate was lower than $400 \text{ mL} \cdot \text{d}^{-1}$, and the methane content decreased to zero. Then the system recovery experiment was carried out by adjusting pH to 7.0, and after six days of recovery, the system operated normally. While at pH 9.0, both the gas production rate and the methane content sharply decreased to zero and the system was unable to recover after six days. The removal efficiencies of PCP and COD as well as the dechlorinated intermediates were studied on the 8th day of pH shock. The results showed that the removal efficiencies of PCP and COD were both low and the accumulation of dechlorinated intermediates was high. Comparing to pH 9.0, the effect on the metabolism of the system is much less than that at pH 6.0.

Key words: [pH shock](#) [PCP](#) [microaerobic granular sludge system](#) [gas production](#) [metabolism](#)

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