

Fenton-混凝法处理苯胺废水

Aniline wastewater treatment by Fenton oxidation-coagulation

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中文摘要:

农药生产过程中产生的苯胺废水, COD浓度高、生物毒性强、可生化性差, 一般生化方法很难处理。研究了Fenton与PAC联用处理苯胺废水。结果表明, Fenton氧化处理苯胺废水在最佳条件为pH=6、 $m(\text{H}_2\text{O}_2)/m(\text{COD})=1.8$ 、 $n(\text{H}_2\text{O}_2)/n(\text{Fe}^{2+})=8$ 时, COD和色度去除率分别为78.4%和92.3%。Fenton氧化后废水B/C值由0.037提高到0.324。最佳条件下联用PAC, 在投加量为320 mg/L时COD与色度去除率分别为83.6%和94.8%, 并且处理时间显著缩短, 实际应用中可减少水力停留时间和构筑物体积。

英文摘要:

Aniline wastewater produced during pesticide production is difficult to be treated by biochemical methods due to its high concentrations of COD, strong toxicity and low degradability. In this study, we used Fenton oxidation and its combination with coagulation to treat aniline wastewater. Results showed that the optimum conditions for Fenton oxidation were: pH=6, $m(\text{H}_2\text{O}_2)/m(\text{COD})=1.8$, $n(\text{H}_2\text{O}_2)/n(\text{Fe}^{2+})=8$. The removal efficiencies for COD and chroma were 78.4% and 92.3%, respectively. Fenton treatment significantly improved biodegradability of aniline wastewater, and the value of B/C increased from 0.037 to 0.324. A combination of Fenton oxidation and coagulation by adding 320 mg/L PAC increased the COD and chroma removal efficiencies to 83.6% and 94.8%, respectively. In addition, the combination shortened the treatment period, HRT, so that the required reactor volume decreased.

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