

عنوان مقاله:

Degradation of trace aqueous 4-chloro-2-nitrophenol occurring in agriculture wastewater by ozone

محل انتشار:

اولین همایش ملی یافته های نوین در پژوهش های کشاورزی و منابع طبیعی (سال: 1394)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Degradation of 4-chloro-2-nitro phenol (4C2NP) by ozonation in aqueous solution was studied in a semi batch reactor under constant ozone dosage and variable pH conditions. The effectiveness of the process was estimated based on the degree of conversion of 4C2NP. It was observed that ozonation is more effective at alkaline reaction of medium than other conditions. The degree of conversion achieved (at the first 5 min of the process) at pH=9 was 99.64% compared to 99.03% and 77.35% at pH=7 and 3, respectively. Another parameter used to quantify the 4C2NP during ozonation was the pseudo first order rate constant k_1 (min^{-1}). Results showed that the rate constant of the process was approximately much higher at the alkaline pH compared to acidic ones. A considerable improvement in chemical oxygen demand (COD) removal was observed at pH above 7. At pH=9, the reduction in COD at the end of the process reached 56.9 %. The degree of organically bounded nitrogen conversion to nitrate was higher at pH=3. The total organic carbon reduction, 15.89 % was observed at pH=9. The 4C2NP degradation intermediate products were analyzed by mass- spectrometry. The main intermediate product was chlorophenol

کلمات کلیدی:

Chemical oxygen demand, Degradation, Kinetic, Mineralization, Total organic carbon

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