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Degradation of TNT in Aqueous Solution by Uncultured Soil Bacterium Clone UD3

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Abstract: A strain isolated from a chemical plant discharge soil was used for the degradation of TNT with a high degrading efficiency. The strain was identified as uncultured soil bacterium clone UD3 (USBC) by PCR technique. Degradation of TNT in aqueous solution by the strain was studied. Results show that the optimum conditions are as follows: glucose concentration is 1 g · L^{-1}; peptone concentration is 1 g · L^{-1}; bacteria concentration is 0.02 g · L^{-1}; pH value is 7; temperature is 30 ℃; reaction time is 24 h; 97.2% TNT is biodegraded by the strain when TNT concentration is 100 mg · L^{-1}; the degradation of TNT by USBC can be described by first-order dynamic equation.

Key words: environmental engineering; TNT; biodegradation; degrading characteristic; dynamics

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