



Removal of Phthalate Esters with PDA through Enhanced Coagulation Technology

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ABSTRACT

The removal of environmental hormone phthalate esters (PAEs) by enhanced coagulation was studied. Copolymer of dimethyl diallyl ammonium chloride and acrylamide(PDA) was employed to removal dimethyl phthalate(DMP), diethyl phthalate(DEP), di-butyl phthalate(DBP). During the coagulation/flocculation process, parameters such as the dosage of PDA, pH value, string time on the second stage and settling time was investigated in order to determine the condition of enhanced coagulation treatment. The results showed that the maximum removal rate of DMP, DEP and DBP were reached 89.7 %, 91.8 % and 92.4 % respectively when the solution of DMP, DEP and DBP initial concentration all were 0.5 mg/L, the dosage of PDA was 8.0 mg/L, pH value was 10.0, the characteristic viscosity is 7.12 dL/g, the time of second stage was 4.0 min and the settling time was 2.0 h. Based on the enhanced coagulation, the maximum removal rate of total organic carbon(TOC) was reached 20.1%.

Keywords: Enhanced coagulation; PDA; phthalic acid ester; removal efficiency.
