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STUDIES ON THE REMOVAL OF PHOSPHATE FROM WATER BY ELECTROCOAGULATION WITH ALUMINIUM PLATE ELECTRODES

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Abstract

In the present work, the removal of anionic phosphate from aqueous solution by electrocoagulation (EC) process using aluminium electrodes was carried out. Batch studies were carried out to investigate the influence of different operating parameters (supporting electrolyte concentration, pH, spacing between electrodes, applied voltage, electrode area, and initial concentration of phosphate) on removal of phosphate from aqueous solution. The initial value of pH was varied from 3 to 8, while the concentration of the electrolyte support ranged from to 25 mg/L to 100 mg/L. The results showed that a maximum removal efficiency of 98% was achieved at a voltage of 10 V and at a pH of 6. The optimum spacing between electrodes obtained for the 98% removal of phosphate 2 cm respectively. The results of the present study revealed that electrocoagulation process could be efficient in eliminating phosphate concentration from water and thus may be a promising and effective technique for the removal of inorganic phosphate from aqueous solution.

Keywords: aluminium electrodes, electrocoagulation, phosphate

Received: May, 2013; *Revised final:* February, 2014; *Accepted:* February, 2014

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