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DEGRADATION OF CHLOROTHIAZIDE IN ACIDIC AQUEOUS SOLUTION BY ELECTRO-FENTON PROCESS

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Abstract

The aim of this study is the treatment of Chlorothiazide in an aqueous medium by Electro-Fenton process using a Platinum anode. This pharmaceutical product is used to treat hypertension. Removal rates and mineralization efficiency have been analyzed under different operational conditions. Degradation kinetics well fitted to a pseudo-first-order reaction. Apparent rate constant of the oxidation of Chlorothiazide by electrochemically generated hydroxyl radicals was determined to be $9.49 \times 10^{-2} \text{ min}^{-1}$ at a temperature of 25°C. Chlorothiazide mineralization in an aqueous solution was followed by the analysis of chemical oxygen demand (COD), the degree of mineralization of 93% was achieved after 7 hours of electrolysis.

Key words: Activation energy, Chlorothiazide degradation, Electro-Fenton process

Received: May, 2013; Revised final: August, 2014; Accepted: August, 2014; Published in final edited form: June 2018
