

# Evaluation of The AMBERLITE IRA-420 Resin Performance In The Treatment Of Pharmaceutical Wastewater By Adsorption Process.

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## Abstract

Since 1970, the detection of pharmaceutical substances, in the various aquatic systems (surface waters, groundwater, drinking water) (Kim et al. 2007), became a global health problem. Their cumulative effect may cause adverse effects of toxicity on the health of people as well as to their environment (Haguenoer 2010), this is the reason why several studies are established in order to treat these pharmaceutical wastewaters, among them we include the separation by the adsorption process in the presence of resin as adsorbant (Murray, Örmeci, and Lai 2017) (Zheng et al. 2017). In our study, the Amberlite IRA 420 resin is tested in order to assess its effectiveness in the treatment of an antibiotic wastewater. The process of adsorption has been studied in batch mode and we have evaluated the effect of some parameters such as pH, the IRA420 mass, the antibiotic concentration and temperature. The adsorption isotherm is described by the model of Langmuir. The results showed that the kinetics is controlled by the model pseudo second order.

Key words: adsorption, antibiotic, kinetics, isotherm.

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