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REMOVAL OF REACTIVE RED 195 FROM AQUEOUS SOLUTION USING CHITIN

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Abstract

Chitin is an adsorbent used to remove Reactive Red 195 (RR 195) from the aqueous solution. Kinetics and equilibrium of the adsorption process were examined in terms of parameters such as pH, temperature, initial dye concentration. In adsorption studies, pH is a strong factor affecting adsorption and the maximum dye adsorption capacity was 55.2 mg/g (pH 3 and 50°C). Experimental data showed that the results were compatible with Langmuir model. Adsorption kinetics was best described with pseudo-first-order kinetics. It has been found that control of the dye uptake rate is achieved by external mass transfer and intraparticle diffusion. The thermodynamic parameter results of the adsorption process showed that the adsorption of RR 195 on the chitin was endothermic and spontaneous.

Key words: adsorption, chitin, kinetics, Reactive Red 195, thermodynamics

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