

Kinetics of Phenol and Aniline Adsorption and Desorption On an Organo-Clay (HDTMA-Montmorillonite)

P. Zhang

The time-dependent adsorption and desorption of phenol and aniline on hexadecyltrimethylammonium-montmorillonite (HDTMA-montmorillonite) from aqueous solutions were determined using a stirred-flow chamber. The experiments were conducted at adsorptive concentrations of 0.001 and 0.01 mol/L for aniline, phenol and mixed solutions of the two organics. Carbon labeled (^{14}C) solutes were used in the study. Phenol and aniline adsorption was completed in 40 min and desorption was completed in 20 min. There did not appear to be competitive adsorption between phenol and aniline on the organo-clay surface. The rate of phenol adsorption was influenced by adsorptive concentration while the rate of aniline adsorption was independent of the adsorptive concentration.