



Algerian montmorillonite clay as adsorbent for the removal of aniline from the aqueous system

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ABSTRACT

The present study concerns with the development of montmorillonite (MM) as adsorbent for water treatment. The work investigates the adsorption of aniline onto Algerian clay from aqueous solution at different initial concentration of aniline, amount of clay at room temperature. The aim of this work was the use of exchanged Na-MM clay with diethylamine (DEA) as a sorbent for purifying aniline contaminated water. Diethylamine was protonated in situ with HCl to obtain diethylammonium cations. The effect of the ratios amine/clay and HCl/amine on the adsorptive behaviour of aniline by exchanged MM clay was examined. The results showed that the removal percentage of aniline by modified clay could reach 85% for $[HCl] = 0.25$ M and $[HCl] = 0.5$ M. Two isotherms based upon Linear and Freundlich models showed good fits with the experimental data.

Keywords: Adsorption; Montmorillonite; Diethylammonium; Removal; Pollutant; Aniline; Water treatment

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