
Adsorption of Surfactants on Montmorillonite

Wayne F. Hower

Halliburton Services, A Division of Halliburton Company, Duncan, Oklahoma

Abstract: Some authors have stated that anionic surfactants are not adsorbed by montmorillonite while others indicate very minor adsorption. Attempts to quantitatively determine the degree of adsorption have shown that certain problems exist which, unless recognized, will completely mask results. Some of these difficulties have been overcome but exact data have not yet been obtained. However, enough information has been gathered to prove that adsorption of anionic surfactants on montmorillonite is real and substantial. Reliable adsorption data for cationic and nonionic surfactants and one having both nonionic and anionic character have been obtained. It is indicated that 550 mg of these surfactants are adsorbed by 1 g of montmorillonite. X-ray diffraction data for complexes of all surfactants investigated confirm positive adsorption. However, the thickness of the adsorbed surfactant layers cannot always be quantitatively related to the amount of adsorbed surfactant.

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