Interaction of Petroleum Heavy Ends with Montmorillonite

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Abstract: Adsorption of asphaltenes and resins onto montmorillonite occurs rapidly and to a large extent irreversibly under near-anhydrous laboratory conditions. Factors which influence the adsorption are the exchangeable cation on the clay, the basic nitrogen components of the molecules, and the solvent. As a result of this adsorption, the physical and chemical properties of the clay are drastically altered. The fundamental principles revealed in this study lead to a better understanding of the physical and chemical behavior of clays in petroleum reservoirs.

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