
Synthesis of the Trimethylsilylation Derivative of Halloysite

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Abstract: The trimethylsilyl derivative from halloysite was prepared by the reaction of halloysite powder with a trimethylsilylating reagent. The product was organophilic and the results of its infrared spectrum, X-ray powder diffraction pattern, and elemental analysis indicated that the trimethylsilylation occurred on silanol groups in the tetrahedral layer of halloysite after the acid decomposition of the octahedral layer. The thermal stability of the product was evaluated by means of differential thermal analysis. It was not possible to obtain the organic derivative from kaolinite by the same procedure. It is suggested that the differences in the reactivity between halloysite and kaolinite is due to the difference in susceptibility of the clay minerals to acid attack.

Key Words: Halloysite • Kaolinite • Synthesis • Trimethylsilylation

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