
Infrared Study of Structural OH in Kaolinite, Dickite, Nacrite, and Poorly Crystalline Kaolinite at 5 to 600 K

R. Prost, A. Dameme, E. Huard, J. Driard and J. P. Leydecker

Station de Science du Sol, Institut National de la Recherche Agronomique Route de Saint Cyr, 78026 Versailles, France

Abstract: The resolution of the infrared spectra of structural OH in kaolin-group minerals increases with decreasing temperature. Poorly crystalline kaolinite gives typical infrared spectra, which suggest the existence of kaolinite-, dickite-, and nacrite-like configurations. The relative amount dickite- and nacrite-like configurations compared with kaolinite-like configurations increases with decreasing crystallinity. Low-temperature infrared spectroscopy is a more sensitive means of estimating the degree of order of poorly crystalline kaolinite than is X-ray powder diffraction.

Key Words: Crystallinity • Dickite • Infrared spectroscopy • Kaolinite • Nacrite • X-ray powder diffraction

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