
Further Consideration of the ^{29}Si Nuclear Magnetic Resonance Spectrum of Kaolinite

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Abstract: The introduction of artificial $\pm b/3$ stacking faults into well-crystallized kaolinite by intercalating and removing hydrazine had no observable effect on the solid-state ^{29}Si nuclear magnetic resonance spectrum of kaolinite. Also, the introduction of such stacking faults did not alter the hydroxyl-stretching region of the infrared spectrum, implying no change in the hydrogen bonding between the displaced layers. Calculations of Si...H distances and Si-O...H angles from reported structures for kaolinite indicated that the resolution of the two Si chemical environments was due to differences in hydrogen-bonding at the surface of the silicate sheet.

Key Words: Hydrazine • Hydrogen bond • Kaolinite • Nuclear magnetic resonance • Stacking fault

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