
Synthesis of Mixed-Layer Kaolinite/Smectite

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Abstract: Mixed-layer kaolinite/smectites containing 40– 90% kaolinite layers have been synthesized from Wyoming smectite. Run times were 4 months at 156° C in solutions of $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$ and KCl or CaCl_2 . Similar KCl runs devoid of Al^{3+} yielded mixed-layer illite/smectites. The supply of Al^{3+} , rather than pK or pH, seems to control the alteration of smectite toward kaolinite or illite.

Key Words: Interstratification • Kaolinite • Mixed layer • Montmorillonite • Smectite • Synthesis

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