
Synthesis of Smectite from Volcanic Glass at Low Temperature

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Abstract: Smectite and zeolites were formed from a volcanic glass as the products of reaction with NaOH solution at 90°C and 100°C under atmospheric pressure. Formation conditions of smectite and various zeolites were determined by the ratio of the amounts of volcanic glass (g) to NaOH (g) in the solution. Smectite was formed under the condition that the values of weight of volcanic glass (g)/(NaOH(g)/40) are between 0.5 and 6. Fe was an important constituent of the octahedral layer of smectite.

Key Words: Low temperature • Smectite • Sodium hydroxide concentration • Synthesis • Volcanic glass • Zeolites

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