
Preparation and Characterization of an 8.4 Å Hydrate of Kaolinite

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Abstract: A stable 8.4 Å hydrate of kaolinite was prepared by exchanging ethylene glycol for water in the 10.8 Å intercalate of ethylene glycol in kaolinite. The hydrate of kaolinite was characterized by XRD, FTIR and TGA/DSC. From the TGA data, one can estimate that there is 0.60 water molecule per $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$ units. The IR data suggest a similarity of the local environment of the intercalated water in this 8.4 Å hydrate of kaolinite and the 8.4 Å hydrate of nacrite previously described by Wada (1965).

Key Words: Ethylene glycol • Hydrate of kaolinite • Intercalation • Kaolinite • Organo-clay

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