
^2H NMR Study of Hydrogen Bonding in Deuterated Kaolinite

Shigenobu Hayashi^{1,2}, Etsuo Akiba¹, Ritsuro Miyawaki³ and Shinji Tomura³

¹ National Institute of Materials and Chemical Research, Tsukuba, Ibaraki 305, Japan

² Department of Chemistry, University of Tsukuba, Tsukuba, Ibaraki 305, Japan

³ National Industrial Research Institute of Nagoya, Kita-ku, Nagoya 462, Japan

Abstract: ^2H NMR spectra of synthetic deuterated kaolinite have been collected in the temperature range from 150 K to 350 K. Hydroxyl groups show a Pake doublet pattern with an asymmetry factor of 0. They are almost fixed spatially, and undergo a wobbling motion with increasing temperature. The quadrupole coupling constant is 273 ± 3 kHz at 150 K, which indicates that interlayer hydrogen bonding is relatively weak.

Key Words: ^2H NMR • Kaolinite • Hydrogen bond

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