

Dynamics of Two-Dimensionally Arranged *n*-Octylammonium Ions Intercalated into Tetrasilicicfluormica

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The dynamic behaviour of *n*-octylammonium ions intercalated into tetrasilicicfluormica was investigated by measuring ^1H and ^2H solid state NMR spectra and ^1H spin-lattice relaxation times. X-Ray diffraction measurements revealed that the cations are arranged with the long axis parallel to the clay sheet. Uniaxial rotation of cations was found to take place above ca. 200 K among non-equivalent potential wells made by clay sheets. As a new type of 2-D motion mode, whole cationic in-plane tumbling in the 2-D layer seems to be excited above ca. 450 K. The obtained results are compared with those previously reported on saponite of an analogous structure.

Key words: Tetrasilicicfluormica; *n*-Octylammonium Ion; ^1H and ^2H NMR; Intercalation Compound; Spin-Lattice Relaxation.