
I.R. Spectroscopic Evidence for Interaction between Hydronium Ions and Lattice OH Groups in Montmorillonite

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Abstract: At low levels of hydration, exchangeable D^+ in montmorillonite interacts with lattice OH groups and quantitatively converts AlMgOH groups to AlMgOD. Hydroxyl groups coordinated to two Al ions undergo a slower exchange, the extent of which is restricted by octahedral Fe^{3+} ions.

The OH stretching vibration of AlMgOH groups in montmorillonite is assigned an unusually high frequency (3687 cm^{-1}) compared with that of the same group in phengites (3602 cm^{-1}).

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