
A Natural 17 Å Montmorillonite-Organic Complex from Alleppey, Kerala State—India

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Abstract: A black organic-rich alluvial clay from Alleppey, Kerala State, India, gave a well defined 17 Å, reflection in the natural untreated state. Ethylene glycol and heat treatments showed it to be essentially a smectite. Treatments with H₂O₂ and 0.1 N NaOH contracted the spacing to about 14 Å, indicating that sorbed organic matter was responsible for the original enhanced spacing.

In the natural state, the clay was chiefly divalent with respect to the ions on its exchange sites and was at a pH of 6–2. Subsequent attempts to resorb the organic matter (which had been extracted from the clay by repeated NaOH treatments, converted to the H-form, concentrated and freeze-dried) into the interlamellar space of H₂O₂-treated clay proved successful only after the pH was brought down to 3–2 and the clay converted to an essentially monovalent state through repeated 1 N NaCl treatments.

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