
A Kinetic Survey of the Cation Exchange and of the Oxidation of a Vermiculite

G. Besson, H. Estrade, L. Gatineau, C. Tchoubar and J. Mering

Laboratoire de Cristallographie, Faculté des sciences, Orleans, France
Centre de Recherche sur les Solides à Organisation Cristalline Imparfaite, C.N.R.S., Orleans, France

Abstract: With the use of a BaCl_2 solution containing radioactive Ba^{2+} ions, kinetics of cation exchange have been done on a Kenya vermiculite, natural on one hand and previously oxidized either by 50°C water or oxygenated water on the other hand. Correlatively, the quantity of ferric iron in the layer has been determined by E.P.R. These two methods have shown that during an oxidation the proportion of iron which stays in the octahedral layer depends upon the nature of the oxidizing agent. During a weak oxidation, the iron stays entirely in an octahedral layer and the exchange capacity of the vermiculite decreases; on the other hand, during an oxidation by oxygenated water, part of the iron is extracted from the octahedral layer and the exchange capacity of the vermiculite is not changed, as established by the studies Of Farmer (Farmer *et al.*, 1971). Kinetic data for Llano vermiculite also are reported and compared with those for the Kenya vermiculite.

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