
Hydroxy Interlayers in Expansible Layer Silicates*

C. I. Rich

Agronomy Department, Virginia Polytechnic Institute, Blacksburg, Virginia

* An invited paper presented at the 16th Clay Minerals Conference, Denver, Colorado.

Abstract: Vermiculites and smectites in soils and sediments are frequently partially interlayered or "chloritized". Dioctahedral expansible layer silicates are those most frequently interlayered, and hydroxy-Al appears to be the principal component of the non-exchangeable interlayer material.

The most favorable soil conditions for interlayer formation appear to be: moderate pH (4-6-5-8), frequent wetting and drying cycles, and low organic matter content.

In marine sediments, hydroxy-Mg interlayering may be significant. Soil-derived clays containing partially filled hydroxy-Al "brucite" sheets may be filled out with hydroxy-Mg. Under reducing conditions, hydroxy-Fe interlayers may be important.

Depending on the OH/Al ratio and Al content of hydroxy-Al interlayers, expansible layer silicate may either promote or retard the formation of gibbsite. Interlayered expansible layer silicates also may be precursors to kaolinite.

Clays and Clay Minerals; 1968 v. 16; no. 1; p. 15-30; DOI: [10.1346/CCMN.1968.0160104](https://doi.org/10.1346/CCMN.1968.0160104)
© 1968, The Clay Minerals Society
Clay Minerals Society (www.clays.org)
