
Isothermal Treatments of Regularly Interstratified Montmorillonite-Beidellite at Hydrothermal Conditions

Hirohisa Yamada and Hiromoto Nakazawa

National Institute for Research in Inorganic Materials Namiki 1, Tsukuba, Ibaraki 305, Japan

Abstract: A glass in the intermediate composition of montmorillonite and beidellite, 50/50 in mole ratio, was treated under a hydrothermal pressure of 100 MPa, in the temperature range from 250 to 500° C and durations from 2 to 129 days. The phases identified in the products were plotted in a time-temperature-transformation (TTT) diagram. The TTT diagram showed that the regularly interstratified montmorillonite-beidellite (r.i.M-B) was a metastable phase above the temperature of 350° C and changed to the assemblage of Na-rectorite + saponite + quartz, through the intermediate assemblage of beidellite + saponite + quartz. The TTT diagram suggested also that the r.i.M-B might be a stable clay mineral below the temperature of 300° C in the middle region of montmorillonite-beidellite pseudo-binary system, although the laboratory confirmation of the mineral stability was not easy for the sluggish reaction.

Key Words: Hydrothermal condition • Isothermal treatments • Regularly stratified montmorillonite-beidellite

Clays and Clay Minerals; December 1993 v. 41; no. 6; p. 726-730; DOI: [10.1346/CCMN.1993.0410611](https://doi.org/10.1346/CCMN.1993.0410611)
© 1993, The Clay Minerals Society
Clay Minerals Society (www.clays.org)
