

---

# Free Energy of Formation of Beidellite from Apparent Solubility Measurements\*

U. K. Misra and W. J. Upchurch<sup>†</sup>

Department of Agronomy, University of Missouri, Columbia, MO 65201, U.S.A.

\* Contribution from the Missouri Agr. Exp. Sta., Journal Series Number 7087.

<sup>†</sup> Research Associate and Associate Professor of Agronomy, respectively.

**Abstract:** The structural formula for K and Mg saturated beidellite was calculated from the total elemental analysis of the <0.2  $\mu$  clay fraction of the  $B_{2t}$  horizon of a Mexico soil. The free energies of formation ( $\Delta G_f^\circ$ ) of K-beidellite and Mg-beidellite as determined from their apparent solubilities were  $-2491.3$  and  $-2484.0 \pm 3.2$  kcal per mole, respectively. The free energies of formation correspond to a clay mineral structure calculated on the basis of a 24 oxygen cell.

*Clays and Clay Minerals*; December 1976 v. 24; no. 6; p. 327-331; DOI: [10.1346/CCMN.1976.0240609](https://doi.org/10.1346/CCMN.1976.0240609)

© 1976, The Clay Minerals Society

Clay Minerals Society ([www.clays.org](http://www.clays.org))

---