Free Energy of Formation of Beidellite from Apparent Solubility Measurements[*]

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Abstract: The structural formula for K and Mg saturated beidellite was calculated from the total elemental analysis of the <0.2 μ clay fraction of the B_{2t} horizon of a Mexico soil. The free energies of formation (ΔG_f°) of K-beidellite and Mg-beidellite as determined from their apparent solubilities were −2491.3 and −2484.0 ± 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.