
The Oxidation of Octahedral Iron in Biotite

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Abstract: Oxidation of octahedral ferrous iron in biotite by saturated bromine water results in a loss of both octahedral and interlayer cations. The hydroxyl adjacent to vacant octahedral cation sites adopt an inclined orientation resulting in a more stable environment for interlayer cations. The only structural change accompanying these processes is a decrease in *b*-axis dimension which is linearly related to octahedral ferric iron content. These findings are in agreement with observations made on naturally weathered biotites.

Clays and Clay Minerals; October 1972 v. 20; no. 5; p. 303-315; DOI: [10.1346/CCMN.1972.0200507](https://doi.org/10.1346/CCMN.1972.0200507)

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