
Weathering of Spodumene to Smectite in a Lateritic Environment

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Abstract: Weathering of spodumene in a lateritized pegmatite in Western Australia was studied by investigating *in situ* samples by electron-beam techniques. The spodumene had mostly altered to smectite. However, some non-crystalline material adjacent to smectite and intermixed with smectite was also observed. No crystallographic orientation between spodumene and smectite was observed by high resolution techniques. The spodumene dissolved to produce etch pits similar to those observed on hornblende grains. The etch pits were almost completely filled with smectite. Most of the Li in the spodumene was lost during its weathering to smectite.

Key Words: Ion-beam thinning • Non-crystalline weathering products • Smectite • Spodumene • Transmission electron microscopy

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