

## **Biotite-chlorite transformation during low temperature alteration of some volcanic rocks from Sinai**

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X-ray diffraction (XRD), microprobe analyses, back-scattered electron (BSE) imaging of biotite and chlorite were done in late Proterozoic volcanic rocks from different localities in Sinai, Egypt, to determine the transformation of biotite to chlorite during low temperature alteration. The magmatic brown and homogeneous biotite show relatively high Al and K contents, while green and greenish brown biotite plates formed at the expense of pre-existing magmatic biotite display unusual composition. They are poor in Ti and K and have an appreciable amount of Al approaching chlorite composition. This is connected with increasing proportion of chlorite component in biotite at the early stages of its alteration. These changes in composition are accompanied by changes in mineral's crystallinity and cause shifting in biotite 10 Å peaks.