
Electron Microscopic Identification of Single Crystals of Wairakite, a Rare Component in Clays

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Abstract: Crystallites of the finest fraction of a clay mineral from Rosamund, California, which account for over 50 per cent of the total weight, are identified as wairakite single crystals of $0.1-1 \mu$ size. High-magnification electron microscopy revealed flat, almost perfectly square-shaped lamellae, which consist of superimposed layers of approximately $< 50 \text{ \AA}$ thickness. Electron diffraction patterns from a selected single crystal proved that the basal plane of the crystallite aligned perpendicular to the electron beam is the (111) plane. It is suggested on the basis of the present study and the report of previous investigators that the pseudocubic wairakite crystals cleave along their (111) and $(1\bar{1}1)$ planes. The indices of high order reflections, unpublished or previously reported as uncertain, are determined.

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