
Scan Electron Micrographs of Kaolins Collected from Diverse Environments of Origin—I

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Abstract: Scan electron micrographs are shown of (1) kaolinite and dickite which crystallized from solution within cavities, (2) kaolinite weathered from clastic primary silicate material, (3) residual kaolinite from primary silicate rock, (4) kaolinite above and below a basal unconformity on granitic rock, and (5) hydrothermally altered kaolinite. The texture of kaolin reflects the environment in which the clay was formed.

Euhedral crystals of kaolin minerals characterize cavity fillings. The weathering environment produces large crystal flakes of kaolinite, expanded books, mats of elongates, high porosity, and low bulk density (less than 2.0). The hydrothermal environment produces smaller crystals, singles, sheaves and packets of crystals, low porosity and high bulk density (2.0 and above).

The interrelationships of genetic environment of kaolin minerals and accompanying texture are discussed in light of available geochemical information.

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