
Growth Conditions and Genesis of Spherical and Platy Kaolinite

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Abstract: Spherical and platy kaolinite crystals were prepared under several hydrothermal conditions. Spherical kaolinite was produced mainly at high solid/water ratio (1/4) and at low temperatures (150° – 200° C). Platy kaolinite predominated in products from experiments with intermediate solid/water ratios (1/256– 1/16) and at high temperatures. Boehmite predominated at low solid/water ratios (1/4096) at all experimental temperatures (180° – 220° C). The results indicate that the growth of the spherical kaolinite was favored at high degrees of supersaturation, whereas the growth of the platy kaolinite was favored at relatively low degrees of supersaturation.

Key Words: Crystal growth • Kaolinite • Morphology • Plates • Spherules • Synthesis

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