
New Stability Diagrams of some Phyllosilicates in the $\text{SiO}_2\text{—Al}_2\text{O}_3\text{—K}_2\text{O—H}_2\text{O}$ System

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Abstract: Aluminum is treated as a mobile, reactive component in newly designed stability diagrams for the $\text{SiO}_2\text{—Al}_2\text{O}_3\text{—K}_2\text{O—H}_2\text{O}$ system. The diagrams show that the stability field of kaolinite is strongly dependent on pH at or below 6· 7 but at 6· 7 or greater the stability field is independent of pH, and also that in present sea water, K-mica is a stable phase with respect to kaolin minerals. Natural waters from present-day, kaolin-forming localities in Mexico and Kentucky are consistent with theoretical interpretations from these stability diagrams.

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