Halloysite-Kaolinite Transformation at Room Temperature

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Abstract: Halloysite (metahalloysite) of various particle sizes has been altered with oxalic and EDTA acids, at room temperature and during different periods of time (5-90 days). The oxalic acid attack at first achieved only a recrystallization of halloysite. The recrystallization is much more significant the smaller the size of the treated halloysite particles. Later the material is destroyed. The EDTA treatment also has provoked during the first days a recrystallization of the halloysitic material which is destroyed again after about 20–25 days. Later kaolinite is formed. The kinetic curve of kaolinite formation is symmetrical with respect to that corresponding to the diminution of amorphous material in the sample. The influence of the halloysite particle size and the complexing effect of the acids in relation to the resulting products are discussed.

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