

EFFECT OF ORGANIC ACIDS ON IRON DISSOLUTION FROM KAOLINITIC CLAY

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Abstract

The aim of the paper is to study the dissolution capacity of iron from an iron-stained kaolinitic clay, using two organic acids (oxalic and citric acids) at two different concentration (0.1M and 0.01M, respectively) and at room temperature, to improve kaolin's whiteness. The influence of pH on dissolution is also studied. The results show that, for both acids, the diluted solutions (0.01M) solubilize more iron from the mineral structure, comparable with the concentrated (0.1M) solutions of acids. Among these two acids, the oxalic acid is capable of dissolving large amounts of iron from kaolin and is suitable to use it on a large scale of applications. The effect of these two acids on iron dissolution was investigated at pH between 2 and 5 and the experiments show that the maximum dissolution corresponds to the pH between 2.0 and 3.0 and decrease after pH = 3.

Keywords: kaolin, iron dissolution, oxalic acid, citric acid.

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