

Effect of Acid Concentration on the Aluminum Leaching Process

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Abstract. This paper explains a study on microwave-assisted leaching of aluminum from peat clay. Microwave-assisted leaching was undertaken using the Pyrex glass reactor in a modified microwave oven. A research was made of the effect of acid concentration, microwave power, temperature, and reaction time on the aluminum leaching recovery. The dominant presence of aluminous minerals determined leaching of aluminum values in hydrochloric acid medium at different concentration and microwave power. The optimum leaching ratio for 4 M hydrochloric acid concentration, 40 °C temperature, and 15 min reaction time was obtained 67% dan 46,6% for 100 W dan 80 W respectively. The microwave assisted leaching is more efficient about overall aluminum dissolution.

Keywords: acid leaching; aluminum; microwave; peat clay