

Factors Affecting Aluminum Dissolve from Acidified Water Purification Sludge

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Abstract : Recovering resources from water purification sludge (WPS) have been gradually stipulated in environmental protection laws and regulations in many nations. Hence, reusing the WPS is becoming an important topic, and recovering alum from WPS is one of the many practical alternatives. Most previous research efforts have been conducted on studying the amphoteric characteristic of aluminum hydroxide for investigating the optimum pH range to dissolve the Al(III) species from WPS, but it has been lack of reaction kinetics or mechanisms related discussion. Therefore, in this investigation, water purification sludge (WPS) solution was broken by ultrasound to make particle size of reactants smaller, specific surface area larger. According to the reaction kinetics, these phenomena let the dissolved aluminum salt quantity increased and the reaction rate go faster.

Keywords : aluminum, acidification, sludge, recovery

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