TREATMENT OF CARBIDE SLUDGE FROM AN ACETYLENE PRODUCTION PLANT BY FLOCCULATION

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ABSTRACT: The treatment of carbide sludge by the flocculation process is a relatively new technique, which is considered more environmentally and economically favourable compared to a pond system commonly practiced in local industries. Tests were carried out in a 15,000 litre vessel using 200 or 400 ppm solid or liquid flocculant, with the slurry/flocculant mixture fed either from the top or bottom. The targeted sludge concentration or “alkalinity” of 25% solid, which is the value desired for commercial purposes, was most optimally achieved with 200 ppm liquid flocculant, fed from the bottom. The sludge thus formed, with a pH of 12.9 is readily purchased by other industries for neutralizing acidic wastes. In addition to the sale of sludge, implementation of the flocculation system eliminates land-filling costs and reduces water usage through the possibility of water recycling.

KEYWORDS: Carbide sludge, acetylene, flocculation, polymeric flocculant, sludge alkalinity