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How mercury can simply and effectively be removed from a waste stream

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ABSTRACT

The present study refers to the analysis of further results obtained by foam fractionating alkaline samples. The highest mercury removal efficiency was observed to result at pH = 9.0. The removal efficiency would decrease as pH was lowered and finally it would reach close to zero at pH = 5.5. It was observed that similar to acidic solutions higher removal efficiencies would obtain if the mercury concentration was lowered. It was also noticed that lower removal efficiencies would result when HCl was utilized (instead of HNO_3) for pH adjustment. No positively charged Hg containing species are available in the pH range where the experiments were conducted. Yet, mercury was still transferred into the foam phase. A responsible phenomenon for this process has been hypothesized. The findings in the analytical rigorous method were in close agreement with the experimental results.

Keywords: Mercury decontamination; Foam fractionation; Mercury chemical speciation

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