Temperature and air–water ratio influence on the air stripping of benzene, toluene and xylene

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Received 15 November 2013; Accepted 5 March 2014

\textbf{ABSTRACT}

Volatile organic compounds in water and wastewater can be removed using air stripping. The effects of temperature and air-water ratios on the air stripping of benzene, toluene and xylene (BTX) from wastewater have been examined at a temperature range of 30–50°C and air-water ratios of 20–100. Removal efficiencies of >99%, >93% and 93% for BTX, respectively, were obtained at 50°C and air-water ratios of 100. The removal efficiencies increase non-linearly with temperature and air-water flow ratio. The effects of increasing temperature on the removal efficiency were found to be more significant at temperatures between 30 and 35°C than at 45 and 50°C. The effects of increasing water-air ratios on the removal efficiency were more significant at air-water ratios of 20–60 than at 80–100. The results indicate that a high removal of BTX can be achieved by operating the air stripper at high temperature conditions even at relatively low air-water ratios and vice versa.

\textit{Keywords}: Air stripping; Volatile organic compounds; Removal efficiency; Wastewater treatment

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