



Advanced purification of methyl orange high concentration

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ABSTRACT

A simple process, vacuum distillation, was utilized for purification of methyl orange (MO) as dye effluent. The dye effluent characteristic of high chemical oxygen demand (COD) value and high chromaticity is difficult to treat for the industrial wastewater treatment. In our work, the effect of some factors on the distillation efficiency (DE), including pressure, concentration and the surfactant based on the optimal conditions was evaluated. The results showed that the COD removal for 99.57% was obtained when the concentration of MO is 2000 mg l⁻¹ at the pressure of 0.070 MPa. Moreover, the polyacrylamide (cationic) used in initial concentration of 500 mg l⁻¹ show satisfactory removal efficiency in the further test.

Keywords: Methyl orange; Dye effluent; Surfactant; Vacuum distillation; Chemical oxygen demand (COD); Distillation efficiency (DE)

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