

Removal of chloride, sulphate, TOC and COD from aqueous solution by vacuum distillation

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ABSTRACT

In this study, treatment of strong wastewater that cannot be treated economically with conventional methods was investigated using vacuum distillation method. Low evaporation temperatures (50–60°C) and low vacuum pressures (30, 40, 60 and 70 kPa) were selected as experimental conditions. The evaporation studies were carried out at 60°C in seawater, while the salinity reduction was investigated under a vacuum of 30–70 kPa and a removal rate of up to 90% was achieved. In a study, on chemical industry wastewater, carried out at 60°C temperature and under a vacuum of 50, 60 and 70 kPa experimental conditions was achieved that COD parameter reduced from 18,800 mg/L to 500 mg/L in 180 min. Albeit COD removal was based on the experiments, parameters such as TOC, pH, sulphate and distillate amount were also resolute.

Keywords: Vacuum evaporation; Water recovery; Desalination; TOC

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