

**Thesis Title** Bentonite Removal of Chromium and Zinc from Wastewater  
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### ABSTRACT

The purpose of this research was to study the efficiency of bentonite in removing chromium and zinc from wastewater in the metal plating industry. The experiment was divided into two parts. Part I was to study the efficiency of bentonite in removing chromium and zinc from wastewater and part II was to study the efficiency of various levels of bentonite with a constant amount of 7.023 g/l of ferrous sulfate in removing chromium and zinc from wastewater at 0, 0.2, 0.4, 0.6, 0.8 and 1 g/l of bentonite and at pH 6, 7, 8, 9, 10 and 11.

The results indicated that the amount of bentonite was positively correlated with the efficiency of chromium and zinc removal ( $P < 0.05$ ) at every pH level. Moreover, it was also found that the efficiencies of bentonite in removing chromium and zinc were significantly different ( $p < 0.05$ ) at all experimented pH levels, except at pH levels of 10 and 11. Furthermore, a mixture of bentonite and ferrous sulfate was more efficient than using bentonite alone.

The optimal condition for bentonite removal of chromium and zinc is 0.8 g/l of bentonite at pH 10 which removed 99.84 % and 99.72% of chromium and zinc respectively. The optimal mixture of bentonite and ferrous sulfate was 0.8 g/l of bentonite at pH 9. It removed 99.98% and 99.64% chromium and zinc respectively.