

# Investigation of natural clay mineral ability to the removal of chloride ion from wastewater as a low-cost adsorbent

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## Abstract

The concentrations above 600 mg liter<sup>-1</sup> of chloride ion, give salty taste water and upper than 200 mg liter<sup>-1</sup> due to water is non-drinkable. High chloride concentrations in freshwater can be harm for human, plants and aquatic organisms. The difficulty with osmo-regulation can hinder survival, growth, and reproduction. In the industrial water purification, the wastewaters may contain a large amount of chlorides, which can cause significant disruption in the ecological balance. Many techniques have been adopted to reduce the amount of chlorides in wastewater. Natural clays are abundantly available low-cost natural resource which is nontoxic to the ecosystem. The present study describes the versatile nature of natural clay and their ability to absorb chloride ions from wastewater. Therefore, the following paper makes an effort towards putting Malek-Siah-Kouh clay as a sorbent for chloride removal. The removal characteristics of chloride ions from wastewater using Malek-Siah-Kouh kaolinite have been investigated under various operating variables like contact time, solution pH, solution temperature, and clay size and dosage. The results showed that the sorption of chloride ions on Malek-Siah-Kouh's clay was fast.

## Introduction