

# Adsorptive Removal of Chromium from Waste Water Using Low-Cost Adsorbents

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**Abstract:** *Now-a-days because of the aggressive world population increment, rapid industrialization, agricultural and household activities, civilization leads to high levels contamination of water in terms of inorganic and organic pollutants. Variety of chromium ions present in industrial waste water can adversely affect to terrestrial and aquatic ecosystems. Trivalent chromium is essential element in small amount and also less toxic than hexavalent chromium. Hexavalent chromium is more toxic than trivalent chromium and also non-essential element thus needs to be removed from industrial waste water. Different techniques have been developed by number of researchers for removal of hexavalent chromium from waste water. This included precipitation, evaporation, electroplating and ion exchange. However, these processes works with various limitations which included removal of hexavalent chromium is restricted to a certain concentration of chromium ions. Thus, adsorption is an alternate process for removing Chromium ions. Adsorptive removal of chromium ions from waste water is an economical one because of the enhanced characteristics of the process of adsorption such as cost-effectiveness, improved adsorptive properties, and increased availability. Therefore, the process of removal of hexavalent chromium by using low-cost adsorbents can be assumed as an eco-friendly one. This review provides a brief summary of the related literature which exists on the low-cost adsorption for removing Chromium from industrial wastewaters this review will also explore the various existing adsorption models. These include the isotherm, kinetics, and thermodynamics along with the impact of various factors on the process of adsorption*

**Keywords:** Low-cost adsorbents, Adsorption, chromiumions

