

Elimination of Heavy Metal Ions from Industrial Wastewater: A Review

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ABSTRACT : One of today's most serious environmental concerns is heavy metal pollution. Heavy metal cleanup is of special relevance because of their tenacity and persistence in the environment. In recent years, a number of methods for removing heavy metals from wastewater have been studied in depth. A review and analysis of the wastewater treatment for elimination of heavy metals are presented in this paper. A few of these techniques include chemical precipitation, ion exchange, membrane filtration, coagulation and flocculation techniques as well as electrochemical approaches. From 2011 through 2021, this article analyses a wide range of published studies. As demonstrated by the literature survey, ion exchange, adsorption and membrane filtration are the most widely investigated techniques for the treatment of heavy metal wastewater. In addition to the initial metal concentration, wastewater composition, investment and operating costs, plant flexibility and reliability, and environmental impact, among other factors, play a role in determining most suited treatment process. For low-concentration heavy metal wastewater treatment, adsorption employing inexpensive adsorbents and biosorbents is considered a cost-effective and efficient technique. Membrane filtering technique may be used to remove heavy metal ions with remarkable efficiency.

Keywords: Heavy metal , Treatment Methods ,Industrial effluents ,Review ,Bisorbents

1 INTRODUCTION

Fresh drinkable water resources are the world's most vital reservoirs. It is critical for all living things on the planet to have access to sufficient amounts of clean water. Due to global population expansion, growing industries, and long-term droughts, available water supplies are diminishing. Aside from over-exploitation, pollution of natural water supplies by refractory pollutants discharged by industry