

A Comparative Study of the Removal Efficiency of Calcium Hydroxide and Sodium Hydroxide as Precipitating Agents for Chromium (III)

Baijnath¹, Lakhani Lal², Vineeta Gautam³, Vijay Laxmi Yadav⁴

^{1,2,3,4}*Department of Chemical Engineering and Technology,
I.I.T. (B.H.U.) Varanasi-221005*

ABSTRACT

The extensive industrial application of chromium results in heavy pollution to the environment and dangerous effects to flora and fauna. Precipitation is rapid and most efficient method for the removal of metal ions from industrial effluents. We herein present a comparative analysis of two well known precipitating agents for the removal of Chromium (III) ion. Waste lime and sodium hydroxide are commercially available low cost chemicals, so these can be easily utilized as precipitating agents for industrial effluents treatment. The comparative studies are carried out for chromium removal under different experimental conditions viz. doses of precipitating agents, pH and settling time. The trivalent chromium removal efficiency using Calcium Hydroxide was found to be approx 76% and that using Sodium Hydroxide was found to be approx 90%. Hence, it can be concluded that the Sodium Hydroxide is better precipitating agent than Calcium Hydroxide for chromium ion removal from aqueous solution.

Keywords: Removal Efficiency; Calcium Hydroxide; Sodium Hydroxide; Trivalent Chromium;