

## ION EXCHANGE CHARACTERISTICS OF HYDROUS OXIDES AND TREATMENT OF CHROMIUM WASTES

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The ion exchange parameters of hydrated titania have been studied under varied conditions. It was shown to possess enhanced anion exchange capacity and thermal stability as compared to the hydrous oxides of Cerium and Zirconium. The increased exchange capacity noted on prior precipitation of the hydrous oxides on a weak anion exchanger is attributed to the increased surface area of the adsorbed exchanger.

Optimum exchange of Cr (VI) was noted with the hydrous oxide of Cerium, whereas no exchange occurred with Cr (III). However, use of the biopolymer, Chitin, as well as its deacetylated product, Chitosan, effected preferential removal of Cr (III) from a mixture containing Cr (VI) and Cr (III). Quantitative metal interaction studies were carried out with Chitosan to confirm these observations.

These results were used to separate Chromium in the oxidation states 3 and 6. The significance of these studies in the treatment of Chromium wastes from the leather tannery and Chrome-plating effluents has been investigated.

### References:

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