

**KINETICS OF CHROMIUM (III) STRIPPING FROM POLYMERIC
MATRIX**

USING HYDROGEN PEROXIDE IN ALKALINE MEDIA

F Mijangos *, M Kamel, M P Elizalde¹ and M Ortueta

*Department of Chemical Engineering, and Department of Analytical Chemistry¹
University of the Basque Country, Apdo. 644, 48080 Bilbao, Spain*

ABSTRACT

Chromium (III) loaded on a cationic resin (Lewatit CNP 80) is oxidized to chromate using hydrogen peroxide in alkaline media. A model is presented that describes the kinetics of the oxidation of Cr (III) in aqueous solution with the combination of hydrogen peroxide and NaOH in a thermostatic batch reactor. The general mechanism of the homogeneous reactions has been postulated and main kinetic parameters of the reactions have been calculated. In addition the paper describes a kinetic model for the heterogenous system (resin phase) on the basis of the homogenous results. The reaction rate is mainly controlled by intraparticle diffusion of the anionic species through the cationic resin. Surprisingly, these species are not rejected from the resin phase by Donnan exclusion.