



RECOVERY OF p-HYDROXYBENZOIC ACID FROM WASTEWATERS BY REACTIVE EXTRACTION

1. EXTRACTION MECHANISM AND INFLUENCING FACTORS

Anca-Irina Galaction¹, Maria Cămăruț², Dan Cașcaval^{2*}

¹ University of Medicine and Pharmacy "Gr.T. Popa" of Iasi, Faculty of Medical Bioengineering, Dept. of Medical Biotechnologies, M. Kogalniceanu 9-13, 700454, Iasi, Romania,
email: anca.galaction@bioinginerie.ro

² Technical University "Gh. Asachi" of Iasi, Faculty of Chemical Engineering, Dept. of Organic and Biochemical Engineering, D. Mangeron 71, 700050, Romania, email: dancasca@ch.tuiasi.ro

Abstract

The comparative study on reactive extraction of p-hydroxybenzoic acid with Amberlite LA-2 and D2EHPA in two solvents with different polarity (n-heptane and dichloromethane) indicated that the extractant type and solvent polarity control the extraction mechanism. Thus, the reactive extraction with Amberlite LA-2 occurs by means of the interfacial formation of an aminic adduct with three extractant molecules in low-polar solvent, or of a salt with one extractant molecule in higher polar solvent. Similarly, the extraction with D2EHPA is based on the formation of an acidic adduct with two extractant molecules in n-heptane, or of a salt with one extractant molecule in dichloromethane. The most efficient extraction has been reached for the combination Amberlite LA-2 - dichloromethane. The values of extraction constant depend on the formation of the interfacial hydrophobic adducts.

Key words: p-hydroxybenzoic acid, reactive extraction, Amberlite LA-2, di-(2-ethylhexyl) phosphoric acid

* Author to whom all correspondence should be addressed: e-mail: dancasca@ch.tuiasi.ro