

ASSESSMENT OF TOXICITY AND BIOACCUMULATION OF ORGANOTIN COMPOUNDS

A. KUNGOLOS¹, S. HADJISPYROU², P. SAMARAS³, M. PETALA³, V. TSIRIDIS³, K. ARAVOSSIS¹ and G. P. SAKELLAROPOULOS³

¹Department of Planning and Regional Development, University of Thessaly, 38334 Volos, Greece

²Laboratory of Inorganic Chemistry, Department of Chemical Engineering, Aristotle University of Thessaloniki, 54006, Greece

³Chemical Process Engineering Laboratory, Department of Chemical Engineering, Aristotle University of Thessaloniki and Chemical Process Engineering Research Institute 6th km Harilaou Thermi Road, 57001, Thermi, Thessaloniki, Greece

ABSTRACT

The toxicity of four organotin compounds towards freshwater crustacean *Daphnia magna* and marine shrimp *Artemia franciscana* was investigated. *Daphnia magna* proved to be more sensitive than *Artemia franciscana* as a test organism in detecting tin toxicity. Tributyltin chloride proved to be the most toxic among all four organotin compounds. Furthermore, trialkyltin compounds were more toxic than dialkyltin compounds. LC₅₀ values for the effect of organotin compounds on *Daphnia magna* were also determined. Tributyltin chloride had an LC₅₀ value equal to 0.00095 mg/L and dimethyltin dichloride had an LC₅₀ value equal to 19.27 mg/L. The interactive effects between tin and cyanide and tin and beryllium on *Artemia franciscana* were also investigated.