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***Treatment of Wastewater Containing Heavy Metals.  
Purification-Concentration of Zn (II) Using Liquid Membrane  
with Different Carriers***

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**Abstract**

The treatment and the industrial sewage valorization is at a time therefore a theme carrier and unifier for the future a larger research offer and more varied. The valorization of the dismissals became an important axis these last years, because of the regimentations and instructions that get in place in the world for the protection of the environment.

The environmental impact of the emissions of heavy metals present in the industrial effluents become extensive more and more. These micro mineral pollutants are discharged into nature thus involving risks of harmfulness with respect to the living organisms in the recepteurs. The discharge of toxic metals into environment is a serious problem facing numerous industries. So the search for extraction techniques to remove those heavy metals are increasing interest. Liquid membranes have shown great potentiel in this way especially in cases where metal concentrations are relatively low and other techniques cannot be applied efficiently.

The fundamental parameters influencing the transport of the zinc (II) through the liquid membrane have been examined (the acidity, nature and concentration of the carriers, the time of transportation ). In this study of the facilitated transport of zinc ions by liquid membranes containing TBP, TOA, HDEHP as carriers.

The chemical variable exam permitted to determine the parameters giving the extraction efficiency and reextraction optimum. Some performances have been gotten so much to the level of the extraction that of the reextraction. The coupling required a real optimization of the set of the parameters. The symmetrical behavior of the two compartments showed that the extraction - reextraction association permits to achieve a transportation, one counter - transportation and a positive coupling. A chemical modelization has allowed to identify the transport mechanisms.

This lets predict an industrial application of the process and to hope for broad applications as well in the field of metalliferous processing liquid waste not very in charge as in that of the industrial wastes. This also allows an effective protection of the environment while being profitable.

**Key words:** zinc, transport, purification, liquid membrane, wastewater.