

## ON THE POTENTIAL TOXICITY OF “PROMISING” CHROMIUM EXTRACTANTS

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The present study aims to the identification of the most effective and less toxic combination of organic solvent- extractant for the extraction of hexavalent chromium [Cr(VI)] from wastewaters with extremely high Cr(VI) concentration (up to 1000 ppm). In terms of organic solvents hexane, heptane, chloroform, ethyl-acetate and kerosene have been tested, whereas as extractants Aliquat 336, TOPO and TPB were used.

Aliquat 336 proved to be the most effective extractant for the removal of Cr(VI). The extraction efficiency of Aliquat 336 for Cr(VI), in combination with any of the organic solvent used, ranges from 95-99%.

In order to check the toxicity of Aliquat 336 we used a mixed culture, derived from the anaerobic sludge of a Municipal Wastewater Treatment Plant. It was proved that Aliquat 336 was toxic for the microorganisms and inhibited their growth. The addition of Aliquat 336 in an anaerobic bioreactor even at very low concentrations led to acute toxicity within two days.

Keywords: hexavalent chromium, extraction, Aliquat 336, toxicity

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