

**STABILIZATION/SOLIDIFICATION OF OIL REFINERY SLUDGE:
IMMOBILIZATION OF HEAVY METALS**

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ABSTRACT

The objective of this work was to investigate whether stabilization/solidification can be used as a treatment method for refinery oily sludge, which is classified as a solid hazardous waste, according to the European Waste Catalogue. The sludge samples used originated from a petroleum storage tank and a centrifuge unit of two Greek refineries. An amount of oily sludge was stabilized and solidified (S/S) with different portions of two kinds of Ordinary Portland Cement (OPC). The leaching behavior of Pb, Ni and Cr in these cement-based waste materials was studied using the standard toxicity characteristic leaching procedure (TCLP) test. The results showed that both binders were very effective in reducing heavy metal leachability by more than 95%. Heavy metal concentration in TCLP extracts of the stabilized/solidified specimens were lower than the respective TCLP limits.