

enhanced by the availability of an apparatus which can maintain a suspension in a moving fluid. With centrifugal elutriation a suspension of contaminated particles, standard silica particles and *C. pyrenoidosa*, were held in the chamber while "clean" media was passed through allowing time dependent determination of contaminant release. The experiment was also run in reverse to allow sorption studies. Silica was found to release 93% of pentachlorophenol within one hour while algal suspensions released 82% within one hour. A model has been developed to describe the release of partitioning processes under dynamic conditions. This technique shows great promise both as a sample handling methodology and a research tool.

Application of microwave heating techniques to the detoxification of contaminated soils

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Abstract

A series of soil samples contaminated with *p*-xylene have been subjected to various vacuum conditions in a microwave heated chamber. Tests thus far indicate that the soil is readily decontaminated at low temperatures without combustion when heated under vacuum conditions. On the other hand, it is very difficult to remove the solvent under atmospheric pressure conditions even with microwave heating. In addition, it was found that the solvent removal rate was increased several times if the soil samples contained moisture in the form of 3% water. The combination of moisture and vacuum yielded the best results. This observation, which is confirmed in the literature, can probably be attributed to the enhancement of microwave absorption by the water molecule and by partial pressure effects of the water vapor which is generated upon heating. The combination of these effects coupled with the low absolute pressure of the vacuum chamber create, in principal, steam distillation of the hydrocarbon solvent.
