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Effects of Solvent and Humic Materials in Fluorimetric Determination of Oil Hydrocarbons in Marine Sediments

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Abstract

Serious interferences were found to occur during the fluorimetric determination of oil hydrocarbons in marine sediments. The presence of trace quantity of methylene chloride in the sediment extracts was found to considerably enhance the fluorescence intensity of chrysene. While the presence of humic materials, naturally existing in sediment, in some cases completely quench the fluorescence. This study suggests that a great precaution should be taken when fluorescence spectroscopy is applied to such determinations.

Keywords: Oil hydrocarbon; sediment; humic material; solvent effect; quenching; fluorescence spectroscopy