

Chemical and ecotoxicological characterization of the “



Oil spills are an important source of PAHs in marine and coastal areas and comprise a short- and long-term threat for aquatic organisms. Some PAHs are known to be toxic, in particular mutagenic and/or carcinogenic, and their toxicological effects must be evaluated. Here, the impact of the “Erika” oil spill, which occurred at the end of 1999, was studied by combining chemical (PAH analyses) and toxicological approaches (biological effect assessment). “Erika” elutriates have been found to be more toxic than the elutriate obtained with a crude oil, Bal 250, inducing deleterious effects in *Mytilus galloprovincialis* and *Crassostrea gigas* embryos and in *Isochrysis galbana* algae. The embryotoxicity test in mussel is more sensitive than growth test in *I. galbana*. Naphthalenic compounds make up more than 95% of total PAHs quantified in elutriates. “Erika” elutriates are enriched with naphthalene, methyl-naphthalene, anthracene and higher-molecular-weight compounds. On the contrary, Bal 250 elutriate is characterized by the highest dibenzothiophene, methyl-dibenzothiophene and dimethyl-dibenzothiophene levels. Weathering does not highly affect

the toxicity of the “Erika” oil. This study also confirms the potential impact of the “Erika” fuel on the biological quality of sea water and sediments from Traict du Croisic on the Atlantic coast of France.

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