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Degradation of Jet and Missile Fuels by Aquatic Microbial Communities.

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RJ-missile fuel, JP-4 Jet fuels, JP-9 Missile fuels, PE62601F, WUAFESC19002034.

**Abstract:**

The fate of jet fuel (JP-4) in aquatic sediments was studied concomitantly in laboratory test systems and in the field. Sediments from an estuarine pond were dosed with jet fuel and then reapplied to the pond as well as into plexiglass trays on the sediment bed and quiescent bottle tests in the laboratory. Thirty-three selected hydrocarbons in the jet fuel were followed chemically to quantitate relative hydrocarbon losses. Several hydrocarbons which biodegraded or rapidly volatilized in the bottle tests, were much slower to disappear in the field and the plexiglass trays. In general, mixing of the jet fuel with sediments increased the persistence of the associated hydrocarbons. The fate of missile fuels in aquatic systems was also investigated. The high density missile fuels RJ-5 and JP-9 resisted biodegradation when incubated with water/sediment suspensions collected from aquatic habitats. RJ-5 and JP-9 were not toxic to the microbial communities at concentrations of 400 mg per liter, but RJ-5 was toxic to *Mysidopsis bahia* in 96-hour acute tests (LC50 88 micrograms/liter). Keywords: Water pollution, Environmental impact

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