Photocatalytic Dechlorination of Chloroalkanes in Hydrocarbon Mixtures

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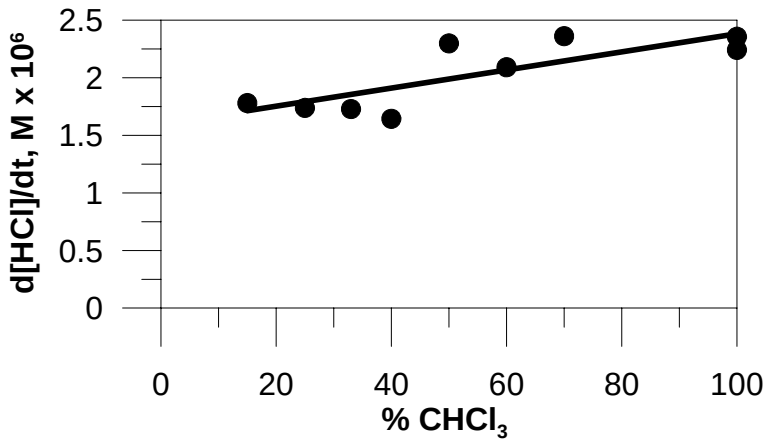

We have proposed that chloroalkane pollutants in hydrocarbon streams may be removable photocatalytically, potentially with sunlight. In order for this to work photocatalysis must occur at a reasonable rate even at low concentrations of the chloroalkane. Our initial results with $FeCl_4^{2-}$ as a homogeneous photocatalyst are shown above, and show continued high catalytic acitivy in 15% chloroform. This could not be extended further because the catalyst precipitated.

We have continued by investigating heterogeneous photocatalyzed decomposition, first in pure chloroform, then in cyclohexane/chloroform mixtures. While we have found and studied some (unanticipated) photocatalysts that work in pure chloroform, the reaction is quenched by cyclohexane. Consequently we are seeking photocatalysts that currently work by a different mechanism.