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CRD EXPLORATORY PHOTOCHEMISTRY

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You may be aware of an exploratory program which J. J. Bloomfield in CRD has started on photochemical reactions. Bloomfield claims rapid and complete dechlorination chlorinated aromatics including Aroclors can be achieved photolytically. He has not measured quantum yields but believes these to be in the range of 0.5-1.0.

Possible use of this technology by the Specialty Products Business Group might be:

- destruction of Aroclors in plant effluent, etc.
- destruction of Penta and Santobrite in plant effluent, etc.
- selective partial dehalogenation to obtain desirable isomers of chlorinated aromatics.

The key to economic viability would of course be the obtainable quantum yield. Several years back Bill Knowles made some calculations indicating that the electrical energy cost in the Toyo Rayon caprolactam process (nitrosocyclohexane $\xrightarrow{\text{light}}$ caprolactam) is 2-4¢/lb of caprolactam at multi-million pound volume. The quantum yield in that process is of the order of 0.7 - 0.9. Capital costs were high, presumably because of the photochemical equipment.

CRD have indicated their willingness to direct their work into areas of interest to the Organic Division. You may want to take them up on that. I am attaching pertinent sections of recent CRD reports.

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