

### Chradical-Induced Dechlorination of Pcb's at Low Temperature

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PCBs currently are principally being destroyed by incineration, which has become the most widely used technique for their removal. Hutzinger et al. reported that at temperatures higher than 800°C, PCBs were thermodynamically unstable and pyrolysis products were C(s), CO, CO<sub>2</sub>, HCl and Cl<sub>2</sub>. Incineration, however, often produces more toxic compounds if it is not carefully controlled. Erickson et al., for example, indicated that polychlorinated dibenzofurans (PCDFs) and polychlorinated dibenzodioxins(PCDDs) were both observed in the combustion of PCBs. About 1% of the PCBs in the system were converted into PCDFs.

Other methods for the destruction of PCBs that have been proposed include wet air oxidation, biodegradation, reaction with superoxide, photodechlorination, sodium metal-promoted dehalogenation, electrolytic reduction, and dechlorination with zero-valent iron. The present work was undertaken to achieve detoxification of aqueous media containing toxic PCBs. To do this a radical-induced total dechlorination of PCBs at low temperature was employed.