Photo-Induced Decomposition of 2-Chloroaniline in Aqueous Solution

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A study was performed on the oxidizing degradation of 2-chloroaniline (used as a model pollutant in water) by photolysis ($\lambda = 254$ nm). The change of spectrum and substrate concentration of treated solutions was measured spectrophotometrically as well as by HPLC. The yields of the degradation products (chloride ions, ammonium ions, formaldehyde, etc.) were studied as a function of UV-dose. Their initial quantum yields (Q_i) were determined by specific analysis. It was shown that the substrate photolysis in the presence of N_2O is most efficient, followed by degradation in media saturated with pure oxygen and air. A probable reaction mechanism for the photo-induced degradation of 2-ClA is presented.