



The reaction of ozone with bromide ions at the air-water interface

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The oxidation of aqueous bromide anions by ozone in sea-salt aerosols releases chemically active halogen to the marine boundary layer. Discrepancies between measured and modeled halogen concentrations have led to the suggestion that halide oxidation occurs to some extent at the air-water interface. We have used an interface-sensitive fluorescent probe to measure pH changes associated with the interfacial reaction of ozone and bromide. The rate of pH change is well described by a Langmuir-Hinshelwood surface-mediated kinetic model. With octanol present at the interface, the rate of pH change tracks the octanol adsorption isotherm, as expected from results of previous work which demonstrated that monolayer amounts of octanol enhances the concentration of ozone at the surface. These observations constitute direct evidence for a surface reaction between ozone and bromide anions.