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Co-ordinating Committee
on the Ozone Layer

Eighth Session

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RECENT RESEARCH RESULTS AND ONGOING
AND PLANNED RESEARCH PROGRAMMES

Submitted by

Denmark

8th Session of CCOL, 24th - 28th February 1986

Reply to UNEP's telex of 11th October 1985
concerning results and plans of research:

"Ozone measurement:

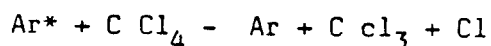
At the University of Aarhus the Dobson station has been operated regularly, taking total column ozone measurements. The results are reported directly to the World Ozone Data Center. The Measurements will continue.

Reaction Kinetics:

At Risoe national Laboratory the oxidation of Cl- and F-substituted hydrocarbons has been the subject of direct spectrokinetic studies, employing the technique of pulsed radiolysis combined with transient UV-spectrophotometry. Gas phase reactions of hydroxyl radicals with selected CFC molecules have been studied and experimental values of rate constants and Arrhenius parameters have been reported.

Oxidation of CFC molecules in the atmosphere takes place via a complex mechanism involving several unstable intermediate species. Recently the oxidation of CCl_4 initiated by pulse radiolysis of $\text{Ar}/\text{CCl}_4/\text{O}_2$ mixtures has been studied. UV-spectra of CCl_3 and CCl_3O_2 have been recorded, and the rate constant for the reaction

$\text{CCl}_3 + \text{O}_2 \rightarrow \text{CCl}_3\text{O}_2$
has been evaluated, $K = 1.5 \times 10^9 \text{ m}^{-1} \text{ s}^{-1}$. Cl-atoms are formed in the Argon sensitized radiolysis



The observation of the characteristic spectrum of ClO is taken as evidence for the reaction



work is in progress to resolve the complete reaction mechanism.

Regulatory action:

Denmark has in 1984 issued a statutory order on propellants and solvents in aerosol cans. The Order's central issue is a list of substances allowed in aerosols for different purposes. Fully halogenated CFC's are not on the list and are thus not allowed. The time of entry into force regarding the fully halogenated CFC's is 1987."

Venlig hilsen

Henri Heron