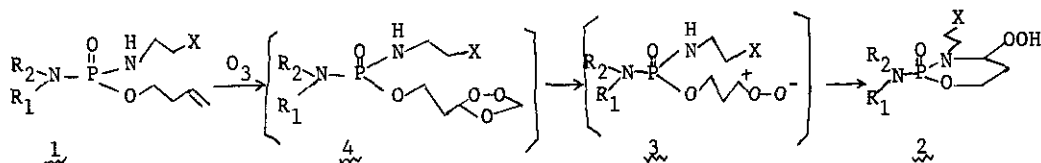


OZONOLYSIS OF O-3-BUTENYLPHOSPHORDIAMIDATES

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The reaction of ozone and olefins has been of continuing interest to chemists for over 100 years. Many mechanisms have been proposed and among them Criegee's proposal of a general mechanism for the reaction of ozone with alkenes involving carbonyl oxide as an intermediate has widely been accepted. Theoretical calculations using MINDO/3 also support this proposal, but GVB calculations insisted on the biradical as the most stable intermediate. In order to obtain further informations on the nature of the intermediate in the ozonolysis, O-3-butenylphosphordiamidates (1) were ozonized in various solvents at variable temperatures. Through these studies it was turned out that the yields of the trapping products (2) were higher in polar solvents at low temperatures, which agreed with the Criegee's proposal of a carbonyl oxide as an intermediate.



- a R₁ = CH₂CH₂Cl, R₂ = H, X = Cl
 b R₁, R₂ = -(CH₂)₂-O-(CH₂)₂-, X = Cl
 c R₁ = CH₂CH₂Br, R₂ = H, X = Br