THE SYNTHESIS OF 2-CHLORO-2-OXO-5,5-DIMETHYL-1,3,2-
DIOXAPHOSPHORINAN AND DETERMINATION OF
THE STRUCTURE

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Five and six-membered rings containing phosphorus have aroused much
interest over the past 20 years. It was found that some of these compound occur in
nucleic acids or are involved as intermediates in a number of biological processes. In
addition, various medical and technological applications have been reported. In the 20
years cyclic phosphorus esters have been investigated extensively as potential
pesticides and as model substances for infrared structural and mechanistic studies.

A general synthesis procedure leading to cyclic hydrogen phosphites and
phosphorinan have been devised. The effect of solvent on the P=O and P-H infrared
stretching modes of cyclic hydrogen phosphites and phosphorinanes have been studied.
It is attributable to dipole-dipole interactions rather than to hydrogen bonding.

The structure of the compound was determined by using some spectroscopic
methods (FT-IR, $^1$H-NMR, $^{31}$P-NMR and $^{13}$C-NMR), elementel analysis and X-Ray

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\begin{align*}
\text{H}_3\text{C} & \quad \text{O} \\
\text{H}_3\text{C} & \quad \text{O} \\
\text{P} & \quad \text{O} \\
\text{Cl} & 
\end{align*}
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