

SYNTHESES OF 5-TRIFLUOROMETHYL-OXADIAZAPHOSPHOLINES COMPOSED OF  
PENTACORDINATE PHOSPHORUS

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Pentacordinate phosphorus compounds have been well investigated from structural interests. On the way of the research of applications of the fluorinated 1,3-dipolar compounds, we found previously the formation of 2,2,2-trichloro-3-phenyl-5-trifluoromethyl- $\Delta^4$ -1,3,4,2-oxadiazaphospholine (1). In this paper, we wish to describe the preparation of polysubstituted oxadiazaphospholines composed of pentacordinate phosphorus from oxadiazaphospholine 1 with various nucleophiles and to discuss the structure of these derivatives on the basis of their spectral data.

Oxadiazaphospholines 1 and 2, obtained by the cyclization of phosphorus pentachloride with N-phenyl- and N-methyl-trifluoroacetohydrazide, respectively, reacted with O-trimethylsilylcresol, O-trimethylsilyltrichloroethanol, and N-methylaniline to afford the corresponding 2,2,2-trisubstituted oxadiazaphospholines 3, 4, 5, and 6, whereas 1 with primary amines such as anisidine and toluidine gave monophosphazenes 7 and 8, respectively.

Bifunctional reagents were then reacted with 1 to prepare spiro compounds. The reaction of 1 with catechol followed by addition of O-trimethylsilylcresol yielded spiro compound 9 and that with another N-phenyl-trifluoroacetohydrazide followed by substitution with O-trimethylsilylcresol, N-methylaniline, and anisidine resulted in the corresponding spiro phospholines 10, 11, and 12.

