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## Phosphorus, Sulfur, and Silicon and the Related Elements

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### Fluoro- $\lambda$ -Monophosphazenes and Fluoro-1.3-Diaza-2 $\delta^5$ ,4 $\delta^5$ -Diphosphetidines

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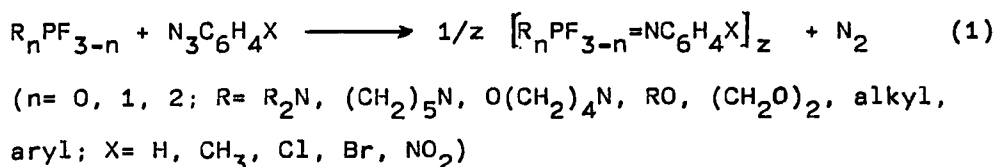
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## Fluoro- $\lambda^5$ -Monophosphazenes and Fluoro-1.3-Diaza-2 $\lambda^5$ ,4 $\lambda^5$ -Diphosphetidines

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34 new fluoro- $\lambda^5$ -monophosphazenes and 37 new fluoro-1.3-diaza-2 $\lambda^5$ ,4 $\lambda^5$ -diphosphetidines have been prepared by applying the STAUDINGER reaction on  $\lambda^3$ -phosphorus compounds (eq. (1)).



The logarithm of the rate constant  $k_1'$  is lineary correlated with the sum of the substituent constants  $\sigma_I^P$ . PF<sub>3</sub> does not react. Apart from a few exceptions (R= Et<sub>2</sub>N, (CH<sub>2</sub>)<sub>5</sub>N; X= NO<sub>2</sub>) the difluorides RPF<sub>2</sub> form diazadiphosphetidines, whereas the monofluorides R<sub>2</sub>PF - except the cyclic (CH<sub>2</sub>O)<sub>2</sub>PF - are more likely to yield monophosphazenes.

In solution the majority of the diphosphetidines dissociates into monophosphazenes. The influence of the substituents R and X on the structure of the compounds and their n.m.r. data is discussed.