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Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713618290>

Reactions of α -Formyl- α -Chlorocyclonones and γ -Butyrolactone with S-Trirnethylsilyl Ester of Dialkyldithiophosphoric Acid

F. I. Guseinov^a; R. N. Burangulova^a; V. V. Moskva^a

^a Department of Organic Chemistry, Kazan State Technological University, Kazan, Russia

To cite this Article Guseinov, F. I. , Burangulova, R. N. and Moskva, V. V. (1996) 'Reactions of α -Formyl- α -Chlorocyclonones and γ -Butyrolactone with S-Trirnethylsilyl Ester of Dialkyldithiophosphoric Acid', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 111: 1, 205

To link to this Article: DOI: 10.1080/10426509608054834

URL: <http://dx.doi.org/10.1080/10426509608054834>

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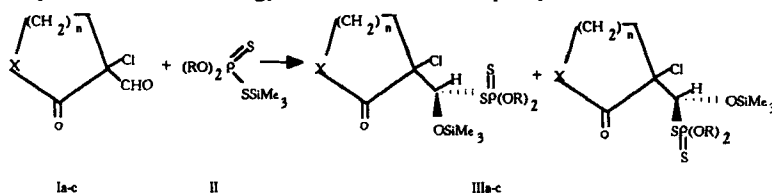
REACTIONS OF α -FORMYL- α -CHLOROCYCLONONES AND γ -BUTYROLACTONE WITH S-TRIMETHYLSILYL ESTER OF DIALKYLDITHIOPHOSPHORIC ACID

F.I.GUSEINOV, R.N.BURANGULOVA, V.V.MOSKVA

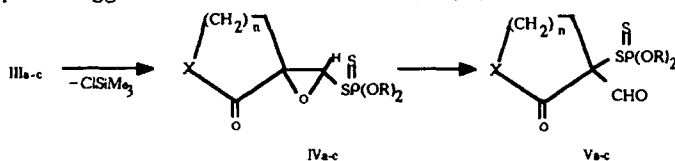
Department of Organic Chemistry, Kazan State Technological University,
 Kazan, 420015, Russia

Abstract α -Formyl- α -chlorosubstituted cyclonones or α -formyl- α -chlor- γ -butyrolactone react with O,O-diisopropyltrimethylsilyldithiophosphate to give adducts which rearrange thermally to α -dithiophosphoryl substituted β -dicarboxylic compounds.

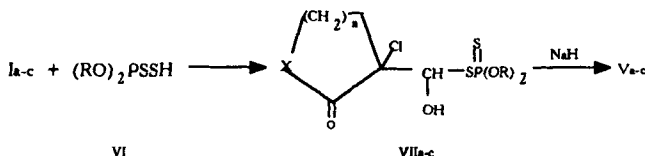
In our previous studies we have shown that silyl esters of semithioacetals of α -chlor- β -oxo and α -phosphoryl- α , α -dichlorosubstituted aldehydes rearrange to 1,3- and 1,2-dicarboxylic compounds¹ or α -ketophosphonates contained chlorothioesters², respectively. The main reason for our current interest is the reactions of α -formyl- α -chlorocyclonones (Ia, b) and α -formyl- α -chlor- γ -butyrolactone (Ic) with dialcoxy-S-trimethylsilyldithiophosphates (II). Stable adducts (IIIa, c) are formed by reactions of oxoaldehydes (Ia, c) with dithiophosphates (II).



The spectral data (IIIa, c) are consistent with the mixture stereomers (¹H NMR: two doublets (CH) J=15Hz). Upon heating, (IIIa, c) rearrange to α -dithiophosphoryl substituted 1,3-dicarboxylic compounds (Va, c) followed by elimination of trimethylchlorosilan and migration of phosphoryl group. We suggest the formation of oxiranes (IVa, c) in this reaction.



The interaction of chlorocontaining hydroxydithiophosphate (VIa, c) obtained from the reaction of (Ia, c) and dithiophosphoric acids, with sodium hydride affords isomeric adducts (Va, c), instead of oxiranes (IVa, c).



REFERENCES

1. F.I.Guseinov, V.V.Moskva, *Zh.Org.Khim.*, **30**, 360-365 (1994)
2. F.I.Guseinov, G.U.Klimentova, V.V.Moskva, *Zh.Obshch.Khim.*, **63**, 710-711 (1993)