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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>

Synthesis and Conformational Analysis of Dihetero-Phosphepines

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To cite this Article Kadyrov, R. A. , Gnevashev, S. G. , Arshinova, R. P. , Arbuzov, B. A. and Butlerov, A. M.(1990) 'Synthesis and Conformational Analysis of Dihetero-Phosphepines', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 51: 1, 234

To link to this Article: DOI: 10.1080/10426509008040768

URL: <http://dx.doi.org/10.1080/10426509008040768>

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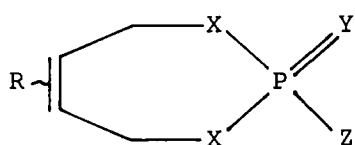
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SYNTHESIS AND CONFORMATIONAL ANALYSIS OF DIHETERO- PHOSPHEPINES

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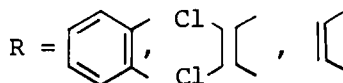
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To investigate the features of conformational behavior for
 phosphorus-containing seven-membered ring we have synthe-
 sized the following compounds:



X = O, S Y = LP, O, S, Se

Z = Ar, NAlk₂, OAlk, OAr



The study of the three-dimensional structure was carried
 out by means of IR, photoelectron and dynamic NMR spectro-
 scopy, and electro-optical methods; the x-ray data and
 theoretical calculations were also taken into considera-
 tion. The three-dimensional structure of these compounds
 is characterized by parameters like ring conformation
 (chair, boat, twist or twist-boat), axial or equatorial
 position of exocyclic substituents on phosphorus atom, and
 rotational orientation of irregular substituents (OAlk or
 OAr). We have analyzed various spectral tests for confor-
 mational study of these species on the basis of conforma-
 tional composition in different media that promoted the
 investigation of complex three- and four-component confor-
 mational equilibria. All results are discussed in terms of
 modern theoretical conceptions of stereochemistry.