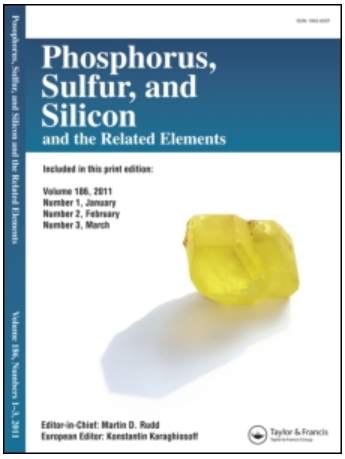

Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

New 3-Cyano-1,2λ 3 -Thiaphosphacyclanes and Their Complexing Properties

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Online publication date: 27 October 2010

To cite this Article Vinogradova, Natalya , Odinets, Irina , Petrovskii, Pavel , Lyssenko, Konstantin and Mastryukova, Tatyana(2002) 'New 3-Cyano-1,2λ 3 -Thiaphosphacyclanes and Their Complexing Properties', Phosphorus, Sulfur, and Silicon and the Related Elements, 177: 8, 1957 — 1958
To link to this Article: DOI: 10.1080/10426500213287
URL: http://dx.doi.org/10.1080/10426500213287

Phosphorus, Sulfur and Silicon, 2002, Vol. 177:1957–1958

1042-6507/02 $12.00 + .00
DOI: 10.1080/10426500290094710

NEW 3-CYANO-1,2λ^3-THIAPHOSPHACYCLANES AND THEIR COMPLEXING PROPERTIES

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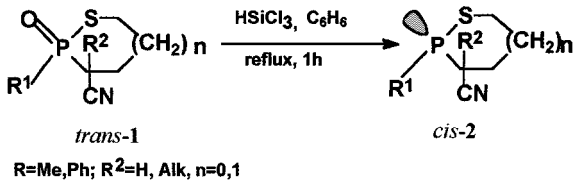
(Received July 29, 2001; accepted December 25, 2001)

Reduction of both individual diastereomers of 2-oxo-1,2-thiaphosphacyclanes by $HSiCl_3$ proceeds with retention of cyclic structure, cyano-group, and stereochemical configuration.

Keywords: 1,2-thiaphosphacyclanes; complexes; reduction

Taking into account the increasing interest in new polydentate ligands for metalocomplexes with definite stereochemistry we developed the facile synthetic route to novel 5- and 6-membered 2-alkyl(aryl)-3-cyano-1,2-thiaphosphacyclanes **2** using the reduction procedure of the corresponding 2-oxo derivatives.[1] The reaction of both individual stereoisomers of **1** with $HSiCl_3$ proceeds resulting in **2** in about quantitative yields. Either in presence of tertiary amine or in the absence of the latter one the reduction is going with the retention of stereochemical structure of the starting cycles. In all the cases, *trans*-**1** yields *cis*-**2** while *cis*-**1** leads to *trans*-**2** (Scheme 1).



SCHEME 1

This work was supported by Russian Basic Research Foundation (grants Nos. 99-03-33014; 00-15-97386).

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The 1:1 complexes of **2** with Co(II), Rh(III), Re(I) and Pd(II) were obtained and it was shown that the nitrogen of CN group serves as the second dentate group only in the case of Re and Pd-complexes.

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[1] I. L. Odinets, N. M. Vinogradova, K. A. Lyssenko, P. V. Petrovskii, and T. A. Mastryukova, *Heteroatom Chem.*, **13**(1), 1 (2002).