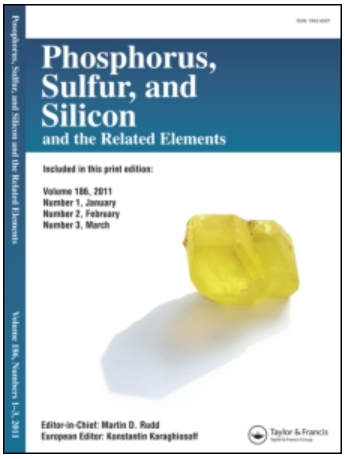


Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

Synthesis of the Novel Azapodands

Rafael Cherkasov[a]; Roman Vasiliev[a]; Airat Garifzyanov[a]
[a] Kazan State University, Russia

Online publication date: 27 October 2010

To cite this Article Cherkasov, Rafael , Vasiliev, Roman and Garifzyanov, Airat(2002) 'Synthesis of the Novel Azapodands', Phosphorus, Sulfur, and Silicon and the Related Elements, 177: 8, 2129
To link to this Article: DOI: 10.1080/10426500213429
URL: http://dx.doi.org/10.1080/10426500213429

Phosphorus, Sulfur and Silicon, 2002, Vol. 177:2129

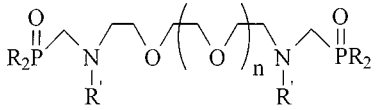
1042-6507/02 $12.00 + .00
DOI: 10.1080/10426500290094873

SYNTHESIS OF THE NOVEL AZAPODANDS

Rafael Cherkasov, Roman Vasiliev, and Airat Garifzyanov
Kazan State University, Russia

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

Phosphorylated podands—the derivatives of linear analogues of crown ethers are known as effective extragents and ionophores. We now report about the synthesis of the novel phosphorylated podands, containing aza groups of general formula.



R=Ph, n-Tol, Am; R'=Bu, Am; n=1,2

SCHEME 1

Various synthetic routes have been suggested. The best method was Kabachnik-Fields type reaction in three-component system between stoicheometric quantities of diorganylphosphinoxides, paraformaldehyde and diaminooligoethers in benzene. Also azapodands can be obtained by alkylation of α-aminophosphinoxides with dihalogeneoligoethers. Substances with $n = 2$ was prepared by reaction of dihalogeneoligoether with sodium derivatives N-(β-oxyethyl)-α-aminophosphinoxides. It was found that all azapodands indicate ionophoric properties in respect to alkaline metal ions.

This work is supported by the joint program of CRDF and Russian Ministry of Education, "Basic Research & High Education" (grant REC 007), and Russian Ministry of Education program "The Investigations of High School at the Frontier of the Science & Techniques" (grant 0.2.01.009).

Address correspondence to Rafael A. Cherkasov, 420008, Kremlyovskaya 18, Kazan, Russia. E-mail: rafael.cherkasov@ksu.ru