

This article was downloaded by:

On: 28 January 2011

Access details: Access Details: Free Access

Publisher Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## 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>

## Conformational Analysis of Halogenonitroethenes and Halogenonitroethenephosphonates in Solution

Yana Vereshchagina<sup>ab</sup>; Eleonora Ishmaeva<sup>a</sup>; Gulnaz Fattakhova<sup>b</sup>; Valentina Berestovitskaya<sup>c</sup>; Lyubov Deiko<sup>c</sup>; Galina Berkova<sup>c</sup>; Sergey Makarenko<sup>c</sup>; Evgeniy Truhin<sup>c</sup>; Arkadiy Pudovik<sup>a</sup>

<sup>a</sup> Kazan State University, Russia <sup>b</sup> Kazan State Technological University, Russia <sup>c</sup> Gertsen Russian State Pedagogical University, Russia

Online publication date: 27 October 2010

**To cite this Article** Vereshchagina, Yana , Ishmaeva, Eleonora , Fattakhova, Gulnaz , Berestovitskaya, Valentina , Deiko, Lyubov , Berkova, Galina , Makarenko, Sergey , Truhin, Evgeniy and Pudovik, Arkadiy(2010) 'Conformational Analysis of Halogenonitroethenes and Halogenonitroethenephosphonates in Solution', Phosphorus, Sulfur, and Silicon and the Related Elements, 177: 8, 2247 — 2248

**To link to this Article:** DOI: 10.1080/10426500213379

**URL:** <http://dx.doi.org/10.1080/10426500213379>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

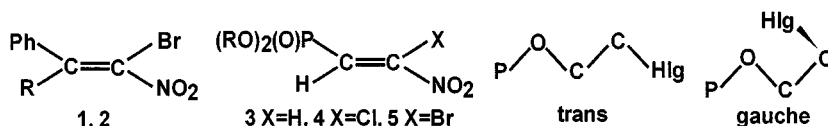
The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

## CONFORMATIONAL ANALYSIS OF HALOGENONITROETHENES AND HALOGENONITROETHENEPHOSPHONATES IN SOLUTION

*Yana Vereshchagina,<sup>a,b</sup> Eleonora Ishmaeva,<sup>a</sup> Gulnaz  
 Fattakhova,<sup>b</sup> Valentina Berestovitskaya,<sup>c</sup> Lyubov Deiko,<sup>c</sup>  
 Galina Berkova,<sup>c</sup> Sergey Makarenko,<sup>c</sup> Evgeniy Truhin,<sup>c</sup>  
 and Arkadiy Pudovik<sup>a</sup>*  
*Kazan State University, Russia;<sup>a</sup> Kazan State Technological  
 University, Russia;<sup>b</sup> and Gertsen Russian State Pedagogical  
 University, Russia<sup>c</sup>*

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

Spatial structure of 2-cyclohexylamino(**1**)- and 2-piperidino(**2**)-1-bromo-1-nitro-2-phenylethenes was studied by PMR, IR spectroscopy, and method of dipole moments (DM). Both molecules had E-configuration (Ph and NO<sub>2</sub> are trans-arranged). High polarity of compounds **1**, **2** (about 7 D) and IR spectral data indicate significant contribution of bipolar forms into these structures. Structure of  $\beta$ -nitrosubstituted vinylphosphonates **3–5** was studied by NMR <sup>1</sup>H, <sup>31</sup>P, UV, and IR spectroscopy, and DM. We determined that these compounds existed in



SCHEME 1

Supported by The Program for Supporting of Leading Scientific Schools (grant 00-15-97424), The Program "Universities of Russia" (grant 015.05.01.17), and grant BRHE REC-007.

Address correspondence to Yana Vereshchagina, Kazan State University, Kremlevskaya Str. 18, Kazan, 420008; Kazan State Technological University, K. Marks St., 68, Kazan, 420015. E-mail: vereshchagina@yahoo.com

a state of totality of s-trans-conformations. Forms with gauche-trans-orientation of C—Cl and C—O bonds prevailed in conformational transitions determined by internal rotation around P-Csp<sup>2</sup> and Csp<sup>3</sup>-Csp<sup>3</sup> bonds.