

Bulletin of the Academy of Sciences of the USSR Division of Chemical Science 1975 vol.24 N7,
pages 1407-1413

Stereochemistry of organophosphorus compounds Communication 9. Study of the NMR- ^1H and ^{32}P method of the configuration and conformation of cyclic phosphites based on dimethyl esters of D- and mesotartaric acids

Samitov Y., Musina A., Gurarii L., Mukmenev E., Arbuzov B.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

1. Trans- and cis-orientations of the carbomethoxyl substituents at the C4 and C5 atoms in 1,3,2-dioxaphospholanes, synthesized on the basis of esters of D- and mesotartaric acids, respectively, were confirmed. 2. Conformation lability of the five-membered heterocycle of the compounds studied was demonstrated in the interval from -80 to 28° ; on the basis of the vicinal spin-spin interaction constants $^3J_{\text{POCH}}$ and $^3J_{\text{HCCH}}$ and their temperature dependence, conclusions were drawn on the most probable conformations, among which the pseudoconversion chiefly occurs. 3. On the basis of the heteronuclear Overhauser effect $^1\text{H}\{-^{31}\text{P}\}$ and the paramagnetic shifts induced by $\text{Eu}(\text{DPM})_3$ and the aromatic solvent, information was obtained in support of a pseudoaxial arrangement of the substituents at the phosphorus atom. © 1976 Plenum Publishing Corporation.

<http://dx.doi.org/10.1007/BF00946402>
