

Phosphorus, Sulfur and Silicon and the Related Elements 2016 vol.191 N11-12, pages 1576-1577

2,4-Diorganyl 1,3,2,4-dithiadiphosphetane-2-4-disulfides, their structure and S-silyl dithiophosphonic derivatives

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Abstract

© 2016 Taylor & Francis Group, LLC. Novel 2,4-diorganyl 1,3,2,4-dithiadiphosphetane-2,4-disulfides were prepared by the reactions of tetraphosphorus decasulfide with butylphenyl ether or 3-brominephenyl-1-isoamyl ether in 1,2-dichlorobenzene. Their structures were established by X-ray single crystal diffraction. Chiral S-trimethylsilyl dithiophosphonates were prepared by the reactions of 2,4-diorganyl 1,3,2,4-dithiadiphosphetane-2,4-disulfides with trimethyl silyl ethers of monoterpenols. Unsaturated S-trimethylsilyl dithiophosphonates were synthesized by the reactions of 2,4-diorganyl 1,3,2,4-dithiadiphosphetane-2,4-disulfides with O-trimethylsilyl ethers of geraniol, nerol, and (R,S)-linalool. S-Esters of dithiophosphonic acids, which possessed antimicrobial activity, were prepared by the reactions of chiral S-trimethylsilyl dithiophosphonates with orthoformates, acetals and thioacetals.

<http://dx.doi.org/10.1080/10426507.2016.1216417>

Keywords

1,3,2,4-Dithiadiphosphetane-2,4-disulfides, dithiophosphorylation, monoterpenols, silylation