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Phosphorus compounds with eight-membered heterocyclic systems: Synthesis and three-dimensional structure

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Abstract

An analysis of the conformational behaviors of phosphorus compounds with different types of eight-membered heterocyclic systems (saturated and unsaturated organic and inorganic systems, their metal complexes as well as metallocycle derivatives) is given. By using the quantitative criteria (torsional angles and puckering parameters) as a description of the conformational state, it is possible to provide a sufficiently complete and consistent picture of their three-dimensional structure in the solid and solution state. A conclusion about the electronic effects which govern their conformational behavior is made. Special attention is paid to the description of synthetic routes to eight-membered heterocycles and of spectroscopic indicators for the reliable identification of conformers.

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Keywords

conformation, Eight-membered rings, phosphorus containing heterocycles, synthesis