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Synthesis and acid-base properties of α -aminophosphoryl compounds

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Abstract

α -Aminophosphoryl compounds of the phosphonate, phosphine oxide, and α,ω -bis(phosphine oxide) series and some of their thiophosphoryl analogs were synthesized. Potentiometric measurements of the pK_a of the conjugate acids revealed an insignificant effect of variation of substituents on the phosphorus, nitrogen, and α -carbon atoms on the basicity of the phosphorylated amines. The latter are weak bases. Organophosphorus groups decrease the basicity of the amines by almost 5 pK_a units. The role of the hydrophobic effect and intramolecular H-bonding in the obtained substances was discussed.

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