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Thermochemistry of Vaporization and Solvation of Some Three- and Tetracoordinated Organophosphorus Compounds

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THERMOCHEMISTRY OF VAPORIZATION AND SOLVATION OF SOME THREE- AND TETRACOORDINATED ORGANOPHOSPHORUS COMPOUNDS

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Abstract The vaporization and solvation enthalpies
 about 100 P(III)- and P(IV)-compounds of different
 acyclic and cyclic space structure have been determined
 and analysed.

Thermochemistry of vaporization and solvation of P(III)-
 and P(IV)-compounds is not studied enough. The
 vaporization enthalpy values of such kind of compounds
 could be easily determined using the Equation (1) [1]:

$$\Delta H_{\text{vap}} \text{ (kJ mol}^{-1}\text{)} = \Delta H_{\text{soln}}(\text{C}_6\text{H}_{14}) + 4.39 + 1.05 \text{MR}_D \quad (1).$$

This circumstance gives us the possibility [2] to
 determine and analyse for ethers (A_i) of phosphoric,
 phosphonic, phosphorus and thiophosphorus acids of
 different structure the non-specific and specific
 solvation enthalpies in any mediums (S) (Eqn.2):

$$\Delta H_{\text{solv}}^{A_i/S} \text{ (obs)} = \Delta H_{\text{solv}}^{A_i/S} \text{ (non-spec.)} + \Delta H_{\text{spec.solv}}^{A_i/S} \quad (2).$$

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