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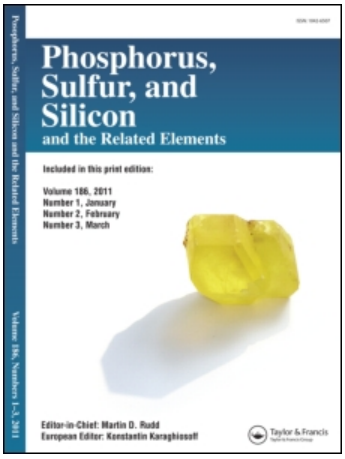

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Thermochemistry of Heteroatomic Compounds. Part 16*. Hydrolysis and Formation Enthalpies of P(III) and As (III) Halides

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Thermochemistry of Heteroatomic Compounds. Part 16*. Hydrolysis and Formation Enthalpies of P(III) and As (III) Halides

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The enthalpies of hydrolysis and formation of P(III) and As(III) halides of acyclic structure have been determined and discussed.

Keywords: enthalpies of hydrolysis and formation; phosphorus (III) and arsenic (III) compounds

RESULTS AND DISCUSSION

It is known that phosphorus and arsenic halides fast and quantitative undergo to hydrolysis (ΔH_{hydr}, kJ mol^{-1}) in the calorimetric cell at 298 K according to eq.(1):

$$ROXCl_2 + H_2O \rightarrow ROH + H_3XO_3 + 2HCl \quad (1)$$

(1): R=Pr, X=P, ΔH_{hydr} = -208.4; (2): R=Pr, X=As, ΔH_{hydr} = 74.1.

We realised these processes and according to Hess-low calculated the formation enthalpies (ΔH_f^O) for liquids (1, 2) at the standard conditions: -455.5, -574.0. These data permit to calculate the formation enthalpy for $BuSPCl_2$ (liq) (-426.3 kJ mol^{-1}).

* For Part 15 see V.V. Ovchinnikov et al. (1998), this journal.
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