

Thermochemistry of Heteroatomic Compounds. Enthalpy of Combustion and Formation of Organic Derivatives of P, As, Sb, and Bi

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A new approach of the calculation of combustion enthalpies of three-coordinated phosphorus, arsenic, antimony, and bismuth organic derivatives in the condensed state on the basis of 4-th equations $\Delta H_{\text{comb}} = f(a, b, N)$ in which a and b are constants and N is a number of valent, bond-forming electrons in the researching molecules. The formation enthalpies of liquid and solid phosphorus and arsenic derivatives (9 compounds) accordingly to the above mentioned equation and Hess-law have been calculated. The gaseous formation heats (in kJ/mol), receiving on the basis two- and six-atomic alcohols (derivatives of diols, ribite and D-mannite), received with account of their vaporization enthalpies. The last includes the solvation topological index of the first order and quadrant of dipole moment of molecules.