

Hydrogen bonding of aliphatic and aromatic amines in aqueous solution: Thermochemistry of solvation

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Abstract

Thermochemistry of hydration of the aliphatic and aromatic amines was studied. Enthalpies of solution at infinite dilution of amines in water were measured using the method of solution calorimetry. A procedure of taking into account the ionization and non-specific hydration of amines in aqueous media was carried out. A method for estimating the enthalpy of hydrogen bonding of amines in aqueous solutions was suggested on the basis of a comparative analysis of the solvation enthalpies of the solutes in water and methanol. The efficiency of this method is confirmed by evaluating the hydrophobic effect enthalpy. © Pleiades Publishing, Ltd., 2012.

<http://dx.doi.org/10.1134/S1070363212100076>
