

Russian Journal of General Chemistry 2010 vol.80 N3, pages 402-407

Enthalpy of cooperative hydrogen bonding in the complexes of triethyl- and tri-n-butylamines with alcohols: Effect of the alkyl chain length

Varfolomeev M., Zaitseva K., Rakipov I., Solomonov B.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The measurements of enthalpies of triethylamine and tri-n-butylamine dissolution in aliphatic alcohols and, vice versa, of aliphatic alcohols in amines were carried out. Enthalpies of specific interactions in the studied systems were calculated. The enthalpy of specific interaction determined in the alcohol medium, are significantly less than those obtained at dissolving alcohols in amines. The mechanism of specific interaction of amines with alcohols is discussed. Enthalpies of cooperative hydrogen bonds of tertiary amines with alcohol clusters are calculated. The dependences between the enthalpies of hydrogen bond and the spatial structure of interacting molecules are revealed. © 2010 Pleiades Publishing, Ltd.

<http://dx.doi.org/10.1134/S1070363210030059>
