

Surface properties of diluted aqueous solutions of solutes containing isopropyl hydrophobic group.

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Rok wydania

2001

Czasopismo

Journal of Chemical Physics

Numer woluminu

114

Strony

5702-5706

DOI

10.1063/1.1355771

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The surface tensions σ of aqueous solutions of isobutanol, isobutylamine, and L-valine were measured in the temperature range between 278 and 308 K using the Wilhelmy plate method. The surface entropies, enthalpies, densities, and compositions were calculated. The results were interpreted in terms of specific interactions of the hydrophobic parts of the molecules adsorbed at the interface. Increasing surface concentration of two former solutes molecules causes, in both cases, a rearrangement at the surface, similar to that observed earlier for water+tert-butanol. The same concerns L-valine, although it was found to be a very weak surfactant, which can be understood if assuming strong interactions of this solute with the bulk water structure and competition between hydrophilic and hydrophobic hydration of its molecules.

Adres publiczny

<https://doi.org/10.1063/1.1355771>

Strona internetowa wydawcy

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