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On behalf of the Organizing Committee of the  
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VOLUMETRIC PROPERTIES OF AQUEOUS SOLUTIONS  
OF POLAR NON-IONIC COMPOUNDS

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Introduction

The non-electrolyte solutions can, under the point of view of their interaction with water, be classified into two groups: a first one is made up of non-polar compounds (e.g. saturated hydrocarbons) and a second one of compounds where polar groups such as -OH, -O-, >C=O, -NH<sub>2</sub>, -CONH<sub>2</sub>, >S=O predominate.

The action of non-polar solutes on the structure of water, in general terms, can be taken as known. This action is believed to intensify the own structure of the solvent in its neighbourhood and is called hydrophobic hydration <sup>(1-4)</sup>.

The polar groups, attending to their capacity of behaving as proton donors or acceptors, form hydrogen bonds with water. This type of interaction is known as hydrophilic hydration <sup>(5)</sup>.

Once the polar groups have a spacial orientation, the bonds formed between these groups and the water are also oriented. From this feature two important consequences result: the first is the possibility of solute-solvent interaction to disturb the structure of the water beyond the molecular layer of the solvent in contact with the solute, once the orientation of the hydrogen bond most likely is not compatible with the tetrahedral water structure. The second is the dependence of the hydration on the conformation of the solute molecule. For instance, it is believed

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