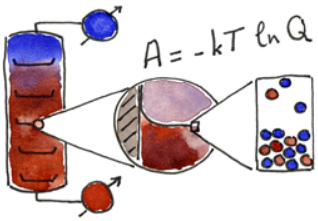

THERMODYNAMICS 2013

3 - 6 September 2013
The University of Manchester

MANCHESTER 1824
The University of Manchester

BOOK OF ABSTRACTS

CONTENTS

Partial molar volumes of amino acids in aqueous solutions of magnesium chloride

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1. Introduction

The lack of a deep molecular picture of the interactions which govern the biochemistry of vital processes is still one critical issue in this area, which limits the development of pharmaceutical solutions for diseases induced by biochemical disorders [1] and the improvement of the efficiency of biotechnological processes [2].

In this concern the study of protein-electrolyte interactions is of most importance. Hydrophobic, charged atomic groups and ions are components of almost every biologically important systems, but proteins are so complex that is useful to investigate the interaction of model compounds such as amino acids [3]. In the last decade much attention has been devoted to the partial molar volumes and hydration properties of amino acids in electrolyte solutions, which are the subject of this study.

2. Results and conclusions

In this work, measurements of the density of aqueous magnesium chloride solutions containing the amino acids (glycine, alanine, valine, serine and threonine), at four different temperatures, were carried out. The new experimental information was combined with data collected from the open literature to understand the forces that rule biologically important structures. In this way, properties such as partial molar volumes, standard volumes of transfer and hydration number were derived and interpreted [4].

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