

1. Record Nr.	UNINA9910131380603321
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Titolo	Ions in solution and their solvation // Yizhak Marcus
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , 2015 ©2015
ISBN	1-118-89227-5 1-118-89233-X 1-118-89230-5
Edizione	[1st ed.]
Descrizione fisica	1 online resource (311 p.)
Disciplina	541.372
Soggetti	Ionic solutions Ions Solution (Chemistry) Solvation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and indexes.
Nota di contenuto	Title Page; Copyright Page; Contents; Preface; Chapter 1 Introduction; 1.1 THE SIGNIFICANCE AND PHENOMENOLOGY OF IONS IN SOLUTION; 1.2 LIST OF SYMBOLS AND ABBREVIATIONS; PRINCIPAL LATIN CHARACTERS; PRINCIPAL GREEK CHARACTERS; PRINCIPAL SUBSCRIPTS; PRINCIPAL SUPERSCRIPTS; Chapter 2 Ions and Their Properties; 2.1 IONS AS ISOLATED PARTICLES; 2.1.1 Bare Ions; 2.1.2 Ions in Clusters; 2.2 SIZES OF IONS; 2.3 IONS IN SOLUTION; 2.3.1 Thermodynamics of Ions in Aqueous Solutions; 2.3.1.1 Heat Capacities of Aqueous Ions; 2.3.1.2 Entropies of Aqueous Ions; 2.3.1.3 Enthalpies of Formation of Aqueous Ions 2.3.1.4 Gibbs Energies of Formation of Aqueous Ions 2.3.1.5 Ionic Molar Volumes in Aqueous Solutions; 2.3.2 Other Properties of Aqueous Ions; 2.3.2.1 Ionic Conductivities in Aqueous Solutions; 2.3.2.2 Ionic Self-Diffusion in Aqueous Solutions; 2.3.2.3 Ionic Effects on the Viscosity; 2.3.2.4 Ionic Effects on the Relaxation of NMR Signals; 2.3.2.5 Ionic Dielectric Decrements; 2.3.2.6 Ionic Effects on the Surface Tension; REFERENCES; Chapter 3 Solvents for Ions; 3.1 SOLVENT

PROPERTIES THAT SUIT ION DISSOLUTION; 3.2 PHYSICAL PROPERTIES OF SOLVENTS; 3.2.1 Volumetric Properties
3.2.2 Thermodynamic Properties 3.2.3 Electrical, Optical, and Magnetic Properties; 3.2.4 Transport Properties; 3.3 CHEMICAL PROPERTIES OF SOLVENTS; 3.3.1 Structuredness; 3.3.2 Solvent Properties Related to Their Ion Solvating Ability; 3.3.2.1 Polarity; 3.3.2.2 Electron Pair Donicity and Ability to Accept a Hydrogen Bond; 3.3.2.3 Hydrogen Bond Donicity and Electron Pair Acceptance; 3.3.2.4 Softness; 3.3.3 Solvents as Acids and Bases; 3.3.4 Miscibility with and Solubility in Water; 3.3.5 Spectroscopic and Electrochemical Windows; 3.4 PROPERTIES OF BINARY AQUEOUS COSOLVENT MIXTURES
3.4.1 Physical Properties of Binary Aqueous Mixtures with Cosolvents
3.4.1.1 Thermodynamic Properties of the Mixtures; 3.4.1.2 Some Electrical, Optical, and Transport Properties of the Mixtures; 3.4.2 Chemical Properties of Binary Aqueous Mixtures with Cosolvents; 3.4.2.1 Structuredness; 3.4.2.2 Properties Related to the Ion Solvating Ability; REFERENCES; Chapter 4 Ion Solvation in Neat Solvents; 4.1 THE SOLVATION PROCESS; 4.2 THERMODYNAMICS OF ION HYDRATION; 4.2.1 Gibbs Energies of Ion Hydration; 4.2.1.1 Accommodation of the Ion in a Cavity; 4.2.1.2 Electrostatic Interactions
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4.4.3 Hydration Numbers from Bulk Properties

Sommario/riassunto

The book starts with an exposition of the relevant properties of ions and continues with a description of their solvation in the gas phase. The book contains a large amount of factual information in the form of extensive tables of critically examined data and illustrations of the points made throughout. It covers: the relevant properties of prospective liquid solvents for the ions the process of the transfer of ions from the gas phase into a liquid where they are solvated various aspects of the solutions of the ions, such as structural and transport ones and the effects of the ions
