Contents

| List of Contributors | | ix |
|-----------------------------------|--|----------|
| Preface Contents of Other Volumes | | хi |
| | | xv |
| 1. | Solvation and Complex Formation in Protic and Aprotic Solvents STEN AHRLAND | |
| | I. Solvation, Solubility, and Complex Stability II. Selection and Properties of Solvents to Be Compared III. Solvation Enthalpies of Individual lons and Neutral Molecules | 2 7 |
| | in Some Representative Solvents | 15 |
| | IV. Stabilities of Complexes in the Solvents Selected | 28 |
| | V. Thermodynamics of Complex Formation Reactions in the | 45 |
| | Solvents Selected References | 45 60 |
| 2. | Solvent Basicity | |
| 4. | ROBERT L. BENOIT AND CHRISTIAN LOUIS | |
| | I. Introduction | 64 |
| | II. Basicity of Bulk Solvents | 66 |
| | III. Basicity of Solvents as Solutes in Reference Acid Media IV. Basicity of Solvents as Reactants with Bronsted and Lewis Reference Acids in Input Media | 83 88 |
| | Reference Acids in Inert Media V. Basicity of Solvents as Reactants with Reference Acids in the Gas Phase | 102 |
| | VI. Correlation of Solvent Basicity Parameters | 109 |
| | References | 116 |
| | Note Added in Proof | 119 |

vi CONTENTS

| 3. | Nonaqueous Solvents in Organic Electroanalytical Chemistry Petr Zuman and Stanley Wawzonek | |
|----|--|--|
| | I Introduction II Advantages of the Use of Nonaqueous Solvents III Problems Involved in the Use of Nonaqueous Solvents IV Conclusions References | 122 122 133 140 140 |
| 4. | Ion-Selective Electrodes in Nonaqueous Solvents E. Pungor and K. Tóth | |
| | I. Introduction II. Fundamental Theoretical Considerations III. Practical Applications References | 145 149 156 176 |
| 5. | Pyridine as a Nonaqueous Solvent JEAN-MAXIME NIGRETTO AND MARCEL JOZEFOWICZ | |
| | I. Introduction II. Purification of Pyridine III. Physical Properties of Pyridine IV. Pyridine as a Nonaqueous Solvent for Analytical Studies V. Behavior of Salts in Pyridine VI. Acid-Base Equilibria in Pyridine VII. Redox Reactions in Pyridine VIII. Halogens and Halogen Complexes in Pyridine References | 180 180 181 183 192 201 23 240 245 |
| 6. | Anhydrous Hydrazine and Water-Hydrazine Mixtures Denise Bauer and Philippe Gaillochet | |
| | I. IntroductionII. PreparationIII. PropertiesIV. Hydrazine as a ReagentV. Anhydrous Hydrazine as a Solvent | 25 25 25 25 25 |

| CONTENTS | vii |
|----------|-----|
| | |

| VI. Water-Hydrazine Mixtures as Solvents | 263 | |
|---|-----|--|
| VII. Solvation by Hydrazine: Comparison with Other Solvents | 267 | |
| VIII. Experimental Data | 270 | |
| References | 272 | |
| Author Index | 277 | |
| Subject Index | | |