

Chapter **IV**

**TRANSFERENCE NUMBERS**

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|   |            |
|---|------------|
| <b>1 Introduction and Basic Theory</b>            | <b>206</b> |
| Conductance                                       | 207        |
| Ionic or Electric Transport Number                | 208        |
| Ion-Constituent Transference Number               | 209        |
| Ion-Constituent Conductance and Mobility          | 213        |
| <b>2 Variation with Physical Factors</b>          | <b>213</b> |
| Variation with Concentration                      | 213        |
| Variation with Solvent, Temperature, and Pressure | 217        |
| <b>3 Applications</b>                             | <b>220</b> |
| Fundamental Information                           | 220        |
| Structural Investigations                         | 221        |
| Separations and Other Applications                | 222        |
| <b>4 Measurement of Transference Numbers</b>      | <b>222</b> |
| Comparison of Methods                             | 222        |
| Hittorf Method                                    | 223        |
| Introduction and theory                           | 223        |
| Experimental                                      | 227        |
| Analysis  | 227        |
| Electrodes  | 228        |
| Disturbing effects                                | 229        |
| Cell design                                       | 230        |
| Quantity of electricity                           | 234        |
| Direct Moving Boundary Method                     | 235        |
| Introduction and theory                           | 235        |
| Experimental                                      | 239        |
| Observation of the boundary                       | 239        |
| Indicator and initial indicator concentration     | 245        |
| Electrodes  | 247        |
| Cell design and filling techniques                | 248        |
| Current and time                                  | 256        |
| Reliability of the results                        | 258        |

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|--|------------|
| The Differential moving boundary method                                    | 258        |
| Indirect Moving Boundary Method  | 259        |
| Introduction and theory  | 259        |
| Experimental   | 260        |
| General conditions   | 260        |
| External analysis  | 261        |
| Internal conductometric analysis   | 262        |
| Internal refractometric analysis   | 263        |
| Analytical Boundary Method   | 264        |
| Introduction and theory  | 264        |
| Experimental   | 267        |
| Quantity of electricity  | 267        |
| The mechanical plane   | 267        |
| Electrodes   | 267        |
| Analysis, indicator, and cell design for two-salt systems                  | 267        |
| Tracer, analysis, and cell design for tagged systems                       | 268        |
| E.m.f. Method Using Cells with Transference                                | 270        |
| Introduction and theory  | 270        |
| Experimental   | 274        |
| Electrodes   | 274        |
| Cell design  | 275        |
| Electrical measurements  | 276        |
| E.m.f. Method Using Cells in Force Fields                                  | 277        |
| Introduction and theory  | 277        |
| Experimental   | 278        |
| <b>5 Appendix</b>  | <b>280</b> |
| Accurate Transference Numbers of Some Electrolytes in Water at 25°C        | 280        |
| Selected Transference Data in Several Solvents and at Various Temperatures | 284        |
| Transference Number Bibliographies   | 287        |

## I INTRODUCTION AND BASIC THEORY

The electrical conductance of an electrolyte solution is a measure of the extent to which *all* the ions present in the solution move in the direction of an applied electric field and so carry the resulting electric current. The relative extent to which a given type of ion *i* participates in this process, and thus the proportion of the current it carries, is expressed by its ionic or electric transport number  $t_i$ . Unfortunately, in the majority of cases (whenever, in fact, there are complex ions present) we simply cannot measure  $t_i$ . What

we can and do of current, not  $R$ . This we can are now to be clarify the picture numbers at all. The equations oxalic acid ( $H_2$  definition on p following disc

### Conductance

Let us consider charge number number  $|z_i|$  ( $e$   $M_i$  mole liter

(In pure SI the influence of the direction tional to the f

where  $u_i$  is the conductance

where  $F$  is the Consider a and perpendicular the plane all  $A$  (square cent charge of  $|z_i|$  across the pl

The current conductivity