

CONTENTS

TABLE

1. Atomic Weights of the Elements	17
2. Radioactive Elements	21
3. Ion Radii	22
4. Ionization Potentials of Atoms and Ions	27
5. Structures of Outer Electron Layers, Ion Potentials and Analytical Groups of Cations	30
6. Atomic Weights, Molecular Weights, Weights of atomic Groups, and Their Logarithms	31
7. Analytical and Stoichiometric Multipliers	70
8. Solubilities of Inorganic and Some Organic Compounds in Water	76
9. Solubilities of Some Inorganic Compounds in Organic Solvents	100
10. Solubility Products of the Chief Sparingly soluble Substances	105
11. Activity Coefficients of Various Ions	117
12. Activity Coefficients of Various Ions at High Values of the Ionic Strength of a Solution	120
13. Calibration of Glassware	121
14. Calculation of the Results of Volumetric-Analytical Determinations	123
15. Masking Reagents in Titration with Complexone III	132
16. Calculation of the Results of Gas and Gasometric Analyses	136
17. Conversion Formulas for Solution Concentrations	159
18. Densities and Concentrations of Solutions	160
19. Chief Acid-Base Indicators	476
20. Ionic Product of Water at Temperatures Ranging	498
21. Colorimetric Determination of the pH of Solutions	199
22. Ionization Constants of Indicators	200
23. Some Mixed Indicators	201
24. Universal Indicators	203
25. Chief Fluorescent Indicators	204
26. Selected Chemiluminescent Indicators	214
27. Principal Adsorption Indicators	216
28. Indicator Commonly Used in Complexometry	220
29. Hydrogen Ion Exponent Evaluated in Terms of the Activity of Hydrogen Ions and – Vice Versa	252
30. Preparation of Buffer Solutions	253
31. Acetic-Acetate Buffer Solutions	262
32. Universal Buffer Mixture	263
33. Buffer Solutions from Individual Substances	264

34. Determination of Electrode Potentials	265
35. Electrometric Determination of pH	269
36. Change of pH in Precipitation of Metal Hydroxides	273
37. Ionization Constants of Chief Acids and Bases	274
38. Dissociation Constants of Complex Ions	283
39. Mobility of Selected Ions at 25 C and infinite Dilution	299
40. Standard Oxidizing Potentials Relative to the Potential of a Standard Hydrogen-Electrode at 25 C	300
41. Chief Oxidation-Reduction Indicators	314
42. Spectral Wavelengths and Colours Corresponding to Them	320
43. Photometric Methods of Determining Various Ions	321
44. Properties of Selected Solvents	332
45. Extraction with Organic Solvents	336
46. Separation of Organic Compounds	347
47. Substances Used for Drying	358
48. Preparation of Hygrostats	359
49. Principal Organic Reagents	360
50. USSR Standard Sieves	402
51. Half-Wave Potentials in Polarographic Analysis with a Dropping Mercury Electrode	403
52. Amperometric Titration of Selected Substances	408
53. Conditions of Amperometric Titration with Two polarized Indicator Electrodes	426
54. Overvoltage of Hydrogen and Oxygen at Various Electrodes	442
55. Potentials of Electrode Decomposition of 1N solutions of Selected Compounds	444
56. Flame Photometry	445
57. British and American Weights and Measures in Comparison with the Metric System of – Measurement	446
58. Simplified Table of Five-Place Logarithms	448
Appendices, Examples of Using Some Tables	460
Index	480