

CONTENTS

	Page
1. Glycerol	1
1.1 Oxidation methods	1
1.2 Esterification Methods	34
1.3 Ether Formation	42
1.4 Dehydration and Detection of Determination of the Acrolein Formed	46
1.5 Reaction with Hydriodic Acid Yielding Isopropyl Iodide	53
1.6 Reaction with Inorganic Cations and Anions	55
1.7 Purely Physical Methods	61
1.8 Non-Chromatographic Separation Methods	64
1.9 Chromatographic Methods	67
References	81
2. Glycerol Compounds: Introduction, and Methods Based on Residual Hydroxyl groups	95
2.1 Oxidation with Periodate	98
2.2 Oxidation with Lead(IV)	102
2.3 Formation of Isopropylidene Derivatives	102
2.4 Complex Formation with Boron Compounds	103
2.5 Esterification	104
2.6 Ether Formation	106
2.7 Infrared Spectrophotometry	110
2.8 Nuclear Magnetic Resonance	111
2.9 Other Oxidations	111
2.10 Thermogravimetry	111
2.11 Non-Chromatographic Separation Methods	111
2.12 Chromatography of Mixtures of Glycerol Mono-, Di-, and Tri-esters of –ether	115
References	128
3. Glycerol Compounds: Methods based on Release of Glycerol from the Sample	133
3.1 Hydrolysis	133
3.2 Aminolysis	147
3.3 Reduction	149
3.4 Thermal Cleavage	150
References	150
4. Glycerol Compounds: Methods Based on Probable Participation of the Complete Molecules of the Sample	155
4.1 Nephelometry	155
4.2 Critical Solution Temperature	156
4.3 Differential Thermal Analysis	157
4.4 Mass Spectrometry	157
4.5 Infrared Spectrophotometry	157
4.6 Solvent Extraction	158
4.7 Chromatography	162
4.8 Lipid Reagents	189
References	207
5. Analysis of Glycerol	219
5.1 Chloride ion	219
5.2 Determination of Water in Glycerol	224
5.3 Assay of Glycerol in Pharmacopoeias	228
References	230

6.	The Enzymic Determination of Glycerol	231
6.1	Basic Reactions	231
6.2	Modes of Determination of NADH	234
6.3	Method of Calculation	234
6.4	Nature and Origin of the Samples	236
6.5	Preliminary Treatment of the Samples	237
6.6	Interfering Substances	239
6.7	Chronological Literature	239
	References	242
	Index	245