

C O N T E N T S

CHAPTER	PAGE
ACKNOWLEDGEMENTS	i
CERTIFICATE	iii
DECLARATION	iv
LIST OF SYMBOLS	v
I INTRODUCTION	1 - 37
References	20 - 37
II PREPARATION AND PROPERTIES OF HYDROXAMIC ACIDS	38 - 64
Abstract	38
Introduction	39 - 41
Experimental	42 - 45
Results and Discussion	46 - 60
References	61 - 64
III THERMODYNAMIC PROTON-LIGAND STABILITY CONSTANTS OF HYDROXAMIC ACIDS	65 - 99
Abstract	65
Introduction	66 - 69
Experimental	70 - 72
Results and Discussion	73 - 95
References	96 - 99

CHAPTER	PAGE
IV THERMODYNAMIC METAL-LIGAND STABILITY	
CONSTANTS OF RARE EARTHS	100 - 135
Abstract	100
Introduction	101 - 110
Experimental	111 - 113
Results and Discussion	114 - 132
References	133 - 135
V SOLID RARE EARTHS COMPLEXES OF	
HYDROXAMIC ACIDS	136 - 146
Abstract	136
Introduction	137
Experimental	138
Results and Discussion	139 - 145
References	146
APPENDIX I : Values of $\log U_H^\circ$, $\log 1/y_{\pm}^\Delta$, and dielectric constants	147 - 150
APPENDIX II :	151
TABLES 1-9: Metal-ligand Titration Data in 70% Dioxan-Water Media at 25 $\pm$ 0.1°C for the N-p-chlorophenyl- m-substituted benzohydroxamic acids	152 - 160
FIGS.I-III: Formation curves	161 - 163
APPENDIX III : Computer Programme for Calculation of Stability Constants	164 - 166