

CONTENTS

SUMMARY	1
1. INTRODUCTION	3
2. OBJECTIVE	5
3. CONCLUSIONS	6
4. RECOMMENDATIONS	7
5. DISCUSSION	8
5.1 Laboratory-Scale, Low-Pressure Reactor for Living Polymerization and Polymer Modification Studies	8
5.1.1 General	8
5.1.2 Reactor System Design	8
5.1.3 Results and Discussion	12
5.1.4 Conclusions	12
5.1.5 References	12
5.2 Hydrogenation of Model Homopolymer and Block Polymer Elastomers	14
5.2.1 Introduction	14
5.2.2 Experimental	16
5.2.3 Results and Discussion	18
5.2.4 Conclusions	31
5.2.5 References	34
5.3 Investigation of Hydrocarbon-Soluble Organolithium Initiators	36
5.3.1 Introduction	36
5.3.2 Experimental	38
5.3.3 Results and Discussion	44
5.3.4 References	61
5.4 Ion-Containing Block and Random Copolymers	63
5.4.1 Introduction	63
5.4.2 Experimental	64
5.4.3 Results and Discussion	67
5.4.4 Conclusions	75
5.4.5 References	78
5.5 Morphology ad Properties of Poly (Urea-Urethane) Elastomers	80
5.5.1 Introduction	80
5.5.2 Experimental	82
5.5.3 Results and Discussion	85
5.5.4 Conclusions	111
5.5.5 References	112