

LIST OF TABLES

Table No.	Table Name	Page No.
PART I		
Table 1	Composition of the monomers in the copolymer (prepared in toluene) in terms of mass fraction determined by PMR and FT-IR spectrometric method.	22
Table 2	Percent yield of homo and copolymer prepared in different solvents and at different initiator concentrations (w/w)	22
Table 3	Solubility behaviours of homo and copolymers	23
Table 4	Intrinsic viscosity values of homopolymer prepared in tetrahydrofuran at different initiator concentrations and at three different temperatures	24
Table 5	Intrinsic viscosity values of copolymer prepared in tetrahydrofuran at different initiator concentrations and at three different temperatures.	24
Table 6	Intrinsic viscosity values of homopolymer prepared in 1, 4-dioxane at different initiator concentrations and at three different temperatures.	25
Table 7	Intrinsic viscosity values of copolymer prepared in 1, 4-dioxane at different initiator concentrations and at three different temperatures	25
Table 8	Intrinsic viscosity values of homopolymer prepared in toluene at different initiator concentrations and at three different temperatures	26
Table 9	Intrinsic viscosity values of copolymer prepared in toluene at different initiator concentrations and at three different temperatures	26
Table 10	Viscometric parameter values of the homopolymer prepared in tetrahydrofuran at different initiator concentrations and at three different temperatures	27
Table 11	Viscometric parameter values of the copolymer prepared in tetrahydrofuran at different initiator concentrations and at three different temperatures	27

Table No.	Table Name	Page No.
Table 12	Viscometric parameter values of the homopolymer prepared in 1, 4-dioxane at different initiator concentrations and at three different temperatures	28
Table 13	Viscometric parameter values of the copolymer prepared in 1, 4-dioxane at different initiator concentrations and at three different temperatures	28
Table 14	Viscometric parameter values of the homopolymer prepared in toluene at different initiator concentrations and at three different temperatures	29
Table 15	Viscometric parameter values of the copolymer prepared in toluene at different initiator concentrations and at three different temperatures	29
Table 16	Percentual differences ($\Delta \% = 100 ([\eta]/[\eta]_h) - 100$) obtained for intrinsic viscosity values of the homopolymer in tetrahydrofuran,	30
Table 17	Percentual differences ($\Delta \% = 100 ([\eta]/[\eta]_h) - 100$) obtained for intrinsic viscosity values of the copolymer in tetrahydrofuran	30
Table 18	Percentual differences ($\Delta \% = 100 ([\eta]/[\eta]_h) - 100$) obtained for intrinsic viscosity values of the homopolymer in 1, 4-dioxane	31
Table 19	Percentual differences ($\Delta \% = 100 ([\eta]/[\eta]_h) - 100$) obtained for intrinsic viscosity values of the copolymer in 1, 4-dioxane	31
Table 20	Percentual differences ($\Delta \% = 100 ([\eta]/[\eta]_h) - 100$) obtained for intrinsic viscosity values of the homopolymer in toluene	32
Table 21	Percentual differences ($\Delta \% = 100 ([\eta]/[\eta]_h) - 100$) obtained for intrinsic viscosity values of the copolymer in toluene	32
Table 22	Determination of molecular weight of the homopolymer in tetrahydrofuran by Mark Houwinks equation	33
Table 23	Determination of molecular weight of the copolymer in tetrahydrofuran by Mark Houwinks equation	33
Table 24	Determination of molecular weight of the homopolymer in 1, 4-dioxane by Mark Houwinks equation	34

Table No.	Table Name	Page No.
Table 25	Determination of molecular weight of the copolymer in 1, 4-dioxane by Mark Houwinks equation	34
Table 26	Determination of molecular weight of the homopolymer in toluene by Mark Houwinks equation	35
Table 27	Determination of molecular weight of the copolymer in toluene by Mark Houwinks equation	35
Table 28	Base oil properties	36
Table 29	Pour point of homopolymer doped base oils (B1)	36
Table 30	Pour point of copolymer doped base oils (B1)	37
Table 31	Pour point of homopolymer doped base oils (B2)	37
Table 32	Pour point of copolymer doped base oils (B2)	38
Table 33	Viscosity index of homopolymer doped base oils (B1)	38
Table 34	Viscosity index of copolymer doped base oils (B1)	39
Table 35	Viscosity index of homopolymer doped base oils (B2)	39
Table 36	Viscosity index of copolymer doped base oils (B2).	40
PART II		
Chapter II, Section A		
Table 1	Composition of the monomers in the copolymers in terms of mass fraction determined by PMR and FT-IR spectrometric method	72
Table 2	Molecular mass obtained by gel permeation chromatography and Thermal gravimetric analysis data for homo- and copolymers	72
Table 3	Intrinsic viscosity values for all prepared homo and copolymer samples calculated by using different equation	73
Table 4	Viscometric constants obtained for all prepared homo- and copolymer samples	73
Table 5	Percentual differences ($\Delta = ([\eta]/[\eta]_h) - 1$) obtained for intrinsic viscosity values	74

Table No.	Table Name	Page No.
Table 6	Determination of molecular weight by Mark-Houwinks equation	74
Table 7	Percentual differences obtained for viscometric molecular weight values	75
Section B		
Table 1	Composition of the monomers in the copolymers in terms of mass fraction determined by PMR and FT-IR spectrometric method	81
Table 2	Physical parameters of Polymeric Samples	82
Table 3	Thickening power and kinematic viscosity data	82
Table 4	Base oil properties	83
Table 5	Pour point of additive doped base oils	84
Section C		
Table 1	Base oil properties	89
Table 2	Pour Point of additive doped base oils (B1)	89
Table 3	Pour point of additive doped base oils (B2)	90
Table 4	Pour point of additive doped base oils (B3)	90
Table 5	Viscosity index of additive doped base oils (B1)	91
Table 6	Viscosity index of additive doped base oils (B2)	91
Table 7	Viscosity index of additive doped base oils (B3)	92
PART III		
Chapter II, Section A		
Table 1	Composition of the monomers in the copolymer (prepared in toluene) in terms of mass fraction determined by PMR and FT-IR spectrometric method P-1 is homopolymer of decyl acrylate (DA); P-2 is the copolymer of DA with styrene	127

Table No.	Table Name	Page No.
Table 2	Interaction parameters and intrinsic viscosity data for the individual polymers in different solvents at 313K.	127
Table 3	Experimental and theoretical viscometric parameters for the ternary mixtures of DA and its copolymer with styrene at different percentage in chloroform at 313K.	128
Table 4	Experimental and theoretical viscometric parameters for the ternary mixtures of DA and its copolymer with styrene at different percentage in toluene at 313K.	128
Table 5	Base oil properties	129
Table 6	Pour point of additive doped base oils	129
Table 7	Viscosity index of additive doped base oils	130
Section B		
Table 1	Intrinsic viscosity values for all prepared homopolymer, copolymer and polymer blends samples in toluene,	135
Table 2	Intrinsic viscosity values for all prepared homopolymer, copolymer and polymer blends samples in chloroform	135
Table 3	Viscometric constants obtained for all prepared homopolymer, copolymer and polymer blend samples in toluene	136
Table 4	Viscometric constants obtained for all prepared homopolymer, copolymer and polymer blend samples in chloroform	136
Table 5	Percentual differences ($\Delta = ([\eta]/[\eta]_h) - 1$) obtained for intrinsic viscosity values in Toluene	137
Table 6	Percentual differences ($\Delta = ([\eta]/[\eta]_h) - 1$) obtained for intrinsic viscosity values in Chloroform	137
Table 7	Determination of molecular weight (M_v) by Mark Houwinks equation $[\eta] = KM^a$ in toluene	138
Table 8	Determination of molecular weight (M_v) by Mark Houwinks equation $[\eta] = KM^a$ in chloroform	138