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APPENDIX

1. Data of viscosity average molecular weight of polyisoprene

(Figure 2.1)

The molecular weight of Polyisoprene (PI) was determined by using the Mark-Houwing equation :

$$[\eta] = KM_v^a$$

Polymer solution concentration (g/l)	Specific viscosity/concentration η_{sp}/C_p (l/g)
0.5	0.4948
1.0	0.5622
1.5	0.6249
2.0	0.6717

2. Data of Young's modulus of PS/P(S-b-I)/PI blends at 25 °, -25 ° and -65 ° C

(Figures 3.6 and 3.8)

% Diblock copolymer	25 °C		-25 °C		-65 °C	
	Mean (x 10^6 Pa)	Std. Dev	Mean (x 10^6 Pa)	Std. Dev	Mean (x 10^6 Pa)	Std. Dev
0	1.23	0.12	2.33	0.27	20.7	5.63
1	1.63	0.08	2.62	0.28	26.25	2.37
2	2.08	0.07	3.55	0.16	30.03	4.95
3	1.93	0.03	2.97	0.26	32.1	2.12
4	1.63	0.08	2.92	0.05	31.95	7.03
5	1.67	0.11	3.04	0.06	31.65	2.47

3. Data of Young's modulus of PPO/P(S-b-I)/PI blends at 25°, -25° and -65°C

(Figures 3.9 and 3.10)

% Diblock copolymer	25 °C		-25 °C		-65 °C	
	Mean (x 10^7 Pa)	Std. Dev	Mean (x 10^7 Pa)	Std. Dev	Mean (x 10^7 Pa)	Std. Dev
0	1.13	1.87	3.24	0.04	24.23	1.55
1	1.52	0.28	4.55	0.48	27.10	2.12
2	1.46	0.24	4.23	0.24	28.03	2.40
3	1.51	0.09	4.32	0.18	26.80	1.59
4	2.17	0.10	5.36	0.54	28.65	2.26
5	3.04	0.33	7.02	0.24	30.30	5.23

4. Data of strain rate of PS/P(S-b-I)/PI blends at 25°, -25° and -65° C

(Figures 3.12 and 3.13)

% Diblock copolymer	25 °C		-25 °C		-65 °C	
	Mean (Min^{-1})	Std. Dev	Mean (Min^{-1})	Std. Dev	Mean (Min^{-1})	Std. Dev
0	0.3034	0.0291	0.1606	0.0187	0.0190	0.0048
1	0.2284	0.0110	0.1520	0.0154	0.0142	0.0014
2	0.1783	0.0063	0.1059	0.0058	0.0113	0.0004
3	0.1918	0.0023	0.1256	0.0106	0.0116	0.0008
4	0.2267	0.0104	0.1271	0.0005	0.0119	0.0026
5	0.2258	0.1606	0.1223	0.0019	0.0117	0.0009

5. Data of strain rate of PPO/P(S-b-I)/PI blends at 25°, -25 ° and -65 ° C

(Figures 3.15 and 3.16)

% Diblock copolymer	25 °C		-25 °C		-65 °C	
	Mean (Min^{-1})	Std. Dev	Mean (Min^{-1})	Std. Dev	Mean (Min^{-1})	Std. Dev
0	0.0423	0.0032	0.0135	0.0002	0.0018	0.0001
1	0.0280	0.0044	0.0092	0.0010	0.0015	0.0001
2	0.0294	0.0056	0.0099	0.0006	0.0015	0.0001
3	0.0276	0.0016	0.0096	0.0004	0.0015	0.0001
4	0.0192	0.0009	0.0078	0.0009	0.0014	0.0001
5	0.0140	0.0016	0.0059	0.0002	0.0013	0.0003

6. Data of yield stress of PS/PI (40/60) and PPO/PI (40/60) blends

(Figures 3.17 and 3.18)

% Diblock copolymer	PS/PI (40/60)		PPO/PI (40/60)	
	Mean (x 10^4 Pa)	Std. Dev	Mean (x 10^5Pa)	Std. Dev
0	1.43	0.04	1.01	0.06
1	1.68	0.04	1.3	0.11
2	1.78	0.09	1.18	0.03
3	1.67	0..04	1.17	0.17
4	1.65	0.001	1.55	0.10
5	1.64	0.06	2.15	0.22

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