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APPENDICES

APPENDIX A

1. Data of the wall shear stress, the apparent strain rate of LLDPE(L2009F)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 190 ^{o}C in Figure 3.1a.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.50	25.4		13.5					2.61E+05					
2.50	81.3		67.7					8.37E+05					
5.00	181		135					1.86E+06					
6.30	220		171					2.27E+06					
7.20	232		195					2.39E+06					
9.80	234		265	255	270	263	7.67	2.41E+06	2.25E+06	2.57E+06	2.41E+06	2.41.E+06	1.60.E+05
12.5	305		338					3.14E+06					
12.8	329		346					3.39E+06					
13.1	334		355					3.45E+06					
14.0	340		379					3.51E+06					

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
15.2	348		411					3.58E+06					
16.5	355		447					3.66E+06					
17.0	359		460					3.70E+06					
20.0	368		541					3.79E+06					
25.0	338	342.35	677	679	674	677	2.50	3.48E+06	3.32E+06	3.61E+06	3.47E+06	1.45E+05	3.53E+06
30.0	363	343.51	812					3.74E+06					3.54E+06
40.0	367	345.34	1083					3.78E+06					3.56E+06
45.0	366	347.16	1218					3.78E+06					3.58E+06
55.0	368	350.83	1489					3.80E+06					3.62E+06
60.0	370	355.43	1624					3.81E+06					3.66E+06
68.0	393		1841					4.05E+06					
70.0	390		1895					4.02E+06					
98.0	401		2653					4.13E+06					
105	411		2842					4.23E+06					
108	414		2924					4.27E+06					
112	435		3032	3010	3030	3024	12.11	4.48E+06	4.35E+06	4.53E+06	4.45E+06	9.29E+04	
115	428		3113					4.41E+06					
120	439		3248					4.53E+06					

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
130	456		3519					4.70E+06					
150	480		4061					4.95E+06					
180	491		4873					5.06E+06					
200	505		5414					5.20E+06					
240	516		6497					5.32E+06					
280	532		7580					5.48E+06					

2. Data of the wall shear stress, the apparent strain rate of LLDPE(L2020F)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 190 ^{o}C in Figure 3.1b.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.10	12.8		2.71					1.32E+05					
0.50	17.3		13.5					1.79E+05					
1.50	55.8		40.6					5.75E+05					
5.00	139		135					1.43E+06					
6.00	159		162					1.64E+06					
7.00	186		189					1.92E+06					
8.00	172		217	208	222	216	7.04	2.04E+06	2.36E+06	1.76E+06	2.05.E+06	3.00E+05	
9.00	207		244					2.14E+06					
11.00	222		298					2.28E+06					
12.00	236		325	309	333	322	12.2	2.43E+06	2.29E+06	2.81E+06	2.51.E+06	2.69E+05	
13.00	245		352					2.53E+06					
15.00	262		406					2.70E+06					
20.00	295		541					3.04E+06					
23.00	310		623					3.19E+06					
25.00	314		677					3.24E+06					

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
40.00	336		1083					3.46E+06					
60.00	388		1624					4.00E+06					
65.00	381	379	1760	1730	1780	1757	25.1	4.06E+06	3.89E+06	3.87E+06	3.94.E+06	1.04E+05	3.90E+05
70.00	396	380	1895					4.08E+06					3.91E+05
75.00	399	382	2030					4.11E+06					3.93E+05
85.00	401	383	2301					4.13E+06					3.94E+05
90.00	404	384	2436					4.17E+06					3.96E+05
93.00	405	386	2518					4.17E+06					3.98E+05
95.00	407	389	2572					4.20E+06					4.00E+05
97.00	408	392	2626					4.20E+06					4.04E+05
99.00	413	395	2680					4.25E+06					4.07E+05
100	395		2707					4.27E+06					
103	416		2788					4.29E+06					
105	417		2842					4.30E+06					
111	417		3005					4.30E+06					
113	417		3059					4.30E+06					
115	420		3113					4.33E+06					
117	423		3167					4.36E+06					

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
119	427		3221					4.40E+06					
120	427		3248					4.40E+06					
127	429		3438					4.42E+06					
129	431		3492					4.45E+06					
130	437		3519					4.50E+06					
131	429		3546	3520	3500	3522	23.2	4.42E+06	4.53E+06	4.66E+06	4.54E+06	1.20E+05	
133	443		3600					4.56E+06					
135	446		3654					4.59E+06					
137	448		3709					4.62E+06					
139	450		3763					4.64E+06					
150	452		4061					4.66E+06					
170	475		4602					4.89E+06					
200	500		5414					5.15E+06					
220	517		5955					5.33E+06					
240	530		6497					5.47E+06					
260	536		7038					5.52E+06					

3. Data of the wall shear stress, the apparent strain rate of MDPE (M3204RU)

Die no.614 (d_c = 0.7525 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 190 ^{o}C in Figure 3.1c.

Velocity (mm/min)	Load (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1} (dynes/cm^2)	τ_{w2} (dynes/cm^2)	τ_{w3} (dynes/cm^2)	$\tau_{w(avg.)}$ (dynes/cm^2)	SD
0.50	18.9	13.5					1.95E+05				
1.00	35.2	27.1					3.63E+05				
3.00	77.4	81.2					7.97E+05				
5.00	82.4	135					8.49E+05				
10.0	136.5	271					1.41E+06				
13.0	183	352					1.89E+06				
17.0	208	460	468	450	459	9.00	2.14E+06	2.20E+06	2.16E+06	2.17.E+06	2.15E+04
20.0	223	541					2.30E+06				
23.0	238	623					2.45E+06				
27.0	254	731					2.62E+06				
30.0	265	812					2.73E+06				
37.0	289	1002					2.98E+06				
43.0	301	1164					3.11E+06				
47.0	314	1272					3.24E+06				

Velocity (mm/min)	Load (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1} (dynes/cm^2)	τ_{w2} (dynes/cm^2)	τ_{w3} (dynes/cm^2)	$\tau_{w(avg.)}$ (dynes/cm^2)	SD
50.0	320	1354					3.30E+06				
53.0	327	1435					3.37E+06				
57.0	334	1543					3.45E+06				
60.0	341	1624					3.52E+06				
70.0	360	1895					3.71E+06				
90.0	378	2436	2420	2430	2429	8.22	3.89E+06	3.63E+06	3.90E+06	3.81.E+06	1.54E+05
100	386	2707					3.98E+06				
150	399	4061					4.11E+06				
200	437	5414					4.50E+06				
230	461	6226					4.76E+06				
250	478	6768					4.92E+06				
260	481	7038	7040	7030	7036	5.33	4.95E+06	5.00E+06	4.87E+06	4.94.E+06	6.58E+04
304	490	8229					5.05E+06				

4. Data of the wall shear stress, the apparent strain rate of HDPE (N3260)

Die no.614 (d_c = 0.7525 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 190 °C in Figure 3.1d.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	18.9		5.41					1.95E+05					
0.50	46.8		13.5					4.83E+05					
1.00	92.0		27.1					9.48E+05					
2.00	183		54.1					1.88E+06					
2.80	215		75.8	69.0	81.0	75.3	6.02	2.22E+06	2.08E+06	2.42E+06	2.24E+06	1.71E+04	
5.00	238		135					2.45E+06					
10.0	273		271					2.81E+06					
13.0	278		352					2.87E+06					
17.0	284		460					2.93E+06					
20.0	291		541					3.00E+06					
23.0	299		623					3.08E+06					
27.0	312		731					3.21E+06					
30.0	318		812					3.28E+06					
33.0	326	306	893	875	896	888	11.4	3.36E+06	3.12E+06	3.48E+06	3.32E+06	1.83E+04	3.15E+06
37.0	329	308	1002					3.39E+06					3.17E+06

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
40.0	330	309	1083					3.40E+06					3.18E+06
43.0	341	311	1164					3.51E+06					3.21E+06
47.0	350	312	1272					3.61E+06					3.22E+06
50.0	354	315	1354					3.64E+06					3.25E+06
53.0	360	317	1435					3.71E+06					3.27E+06
57.0	367	319	1543					3.78E+06					3.29E+06
60.0	368	322	1624					3.79E+06					3.32E+06
65.0	372	325	1760					3.84E+06					3.35E+06
70.0	374		1895	1877	1891	1888	9.41	3.86E+06	3.72E+06	3.61E+06	3.73E+06	1.24E+04	
100	376		2707					3.88E+06					
150	379		4061					3.90E+06					
200	381		5414					3.93E+06					
230	434		6226					4.48E+06					
250	455		6768					4.69E+06					

5. Data of the wall shear stress, the apparent strain rate of HDPE(H5690S)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 190 °C in Figure 3.1e.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	23.9		5.41					2.46E+04					
0.50	44.0		13.5					4.54E+04					
1.00	79.4		27.1					8.19E+04					
1.50	131		40.6					1.35E+05					
2.00	153		54.1					1.57E+05					
2.50	168		67.7					1.73E+05					
3.00	186		81.2					1.91E+05					
3.50	198		95					2.04E+05					
4.00	209		108					2.16E+05					
4.30	219		116					2.26E+05					
4.50	222		122					2.29E+05					
5.00	232		135					2.40E+05					
5.50	242		149					2.49E+05					
6.00	250		162					2.58E+05					
6.50	258		176					2.66E+05					

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
7.00	267		189					2.75E+05					
8.50	288		230					2.96E+05					
9.00	292		244					3.01E+05					
9.50	296		257					3.05E+05					
10.0	300		271					3.09E+05					
10.5	303		284					3.13E+05					
11.0	308		298					3.17E+05					
11.5	312		311					3.22E+05					
12.0	316		325					3.26E+05					
12.5	319		338					3.29E+05					
13.0	324		352					3.34E+05					
14.0	331		379					3.42E+05					
15.0	336		406					3.46E+05					
17.0	351	298	460	550	370	460	90.0	3.62E+05	3.21E+06	2.70E+06	2.09E+06	1.52E+06	3.07E+05
20.0	354	291	541					3.65E+05					3.00E+05
23.0	356	295	623					3.67E+05					3.04E+05
40.0	360	293	1083					3.71E+05					3.02E+05
47.0	363	295	1272					3.74E+05					3.04E+05

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
50.0	365	292	1354					3.76E+05					3.01E+05
60.0	375	291	1624					3.86E+05					3.00E+05
65.0	297	291	1760	1600	1780	1713	98.6	3.06E+05	2.94E+06	3.16E+06	2.14E+06	1.59E+06	3.00E+05
70.0	302		1895					3.12E+05					
100	347		2707	3000	2000	2569	514.1	3.57E+05	3.65E+06	3.99E+06	2.67E+06	2.01E+06	
150	407		4061					4.19E+05					
200	445		5414					4.58E+05					
250	487		6768					5.02E+05					
300	500		8121					5.15E+05					

6. Data of the wall shear stress, the apparent strain rate of HDPE (R1760)

Die no.614 (d_c = 0.7525 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 190 ^{o}C in Figure 3.1f.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	8.89		5					9.16E+04					
0.50	21.2		14					2.18E+05					
1.00	45.2		27					4.65E+05					
3.00	84.6		81					8.72E+05					
5.00	111		135					1.15E+06					
7.00	128		189					1.32E+06					
10.0	160		271					1.65E+06					
13.0	206		352					2.12E+06					
17.0	290		460	550	370	460	90.0	2.99E+06	3.21E+06	2.70E+06	2.97E+06	2.50E+05	
20.0	330		541					3.40E+06					
23.0	344	264	623	680	470	591	109	3.55E+06	3.90E+06	3.20E+06	3.55E+06	3.50E+04	2.72E+05
27.0	338	267	731					3.49E+06					2.75E+05
30.0	339	269	812					3.49E+06					2.77E+05
33.0	342	272	893					3.52E+06					2.80E+05
37.0	345	275	1002					3.56E+06					2.83E+05

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	
40.0	346	279	1083					3.56E+06					2.88E+05
43.0	354		1164	1480	1000	1215	244	3.65E+06	3.40E+06	3.85E+06	3.63E+06	2.25E+04	
47.0	357		1272					3.68E+06					
50.0	358		1354					3.69E+06					
53.0	359		1435					3.70E+06					
57.0	359		1543					3.70E+06					
60.0	359		1624					3.70E+06					
65.0	368		1760					3.79E+06					
70.0	369		1895					3.80E+06					
100	375		2707	3000	2000	2569	514	3.86E+06	3.65E+06	3.99E+06	3.83E+06	1.72E+04	
150	376		4061					3.87E+06					
200	456		5414					4.70E+06					
230	554		6226					5.71E+06					
250	623		6768					6.42E+06					

7. Data of the wall shear stress, the apparent strain rate of LLDPE(L2020F)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 160 ^{o}C in Figure A1a.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	22.4		5.41					2.31E+05					
0.50	55.2		13.5					5.68E+05					
1.00	88.2		27.1					9.09E+05					
3.00	168		81.2					1.73E+06					
5.00	246		135	142	145	141	4.94	2.53E+06	2.62E+06	2.48E+06	2.54E+06	7.08E+04	
7.00	247		189					2.54E+06					
10.0	284		271					2.93E+06					
13.0	310		352					3.20E+06					
17.0	334		460					3.44E+06					
20.0	351		541					3.62E+06					
23.0	357		623					3.68E+06					
27.0	352		731					3.62E+06					
30.0	361	340	812	832	809	818	12.5	3.72E+06	3.82E+06	3.67E+06	3.74E+06	7.64E+04	3.51E+06
33.0	365	341	893					3.76E+06					3.51E+06
37.0	354	342	1002					3.65E+06					3.52E+06

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
40.0	355	343	1083					3.65E+06					3.53E+06
43.0	363	344	1164					3.74E+06					3.54E+06
47.0	371	345	1272					3.82E+06					3.55E+06
50.0	361	346	1354					3.72E+06					3.56E+06
53.0	369	348	1435					3.80E+06					3.58E+06
57.0	379	349	1543					3.90E+06					3.60E+06
60.0	386	351	1624					3.98E+06					3.62E+06
65.0	396	355	1760					4.08E+06					3.66E+06
70.0	406	359	1895	1891	1799	1862	54.3	4.18E+06	4.11E+06	4.22E+06	4.17E+06	5.61E+04	3.70E+06
100	467		2707					4.81E+06					
150	528		4061					5.44E+06					
200	549		5414					5.66E+06					
230	555		6226					5.71E+06					
250	563		6768					5.80E+06					

8. Data of the wall shear stress, the apparent strain rate of LLDPE(L2020F)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 170 °C in Figure A1b.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD
0.20	24.5		5.41					2.52E+05				
0.50	41.3		13.5					4.25E+05				
1.00	75.6		27.1					7.79E+05				
3.00	143		81.2					1.47E+06				
5.00	183		135	142	150	142	7.34	1.88E+06	1.75E+06	2.00E+06	1.88E+06	1.25E+05
7.00	241		189					2.49E+06				
10.0	243		271					2.50E+06				
13.0	269		352					2.77E+06				
17.0	299		460					3.08E+06				
20.0	319		541					3.29E+06				
23.0	337		623					3.47E+06				
27.0	355		731					3.66E+06				
30.0	356		812					3.67E+06				
33.0	361		893					3.72E+06				
37.0	358		1002					3.69E+06				

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD
43.0	355		1164					3.66E+06				
47.0	351		1272					3.62E+06				
50.0	355	340	1354	1351	1347	1351	3.28	3.66E+06	3.48E+06	3.55E+06	3.56E+06	9.09E+04
53.0	360	341	1435					3.71E+06				
57.0	365	342	1543					3.77E+06				
60.0	368	343	1624					3.79E+06				
65.0	371	344	1760					3.83E+06				
70.0	371	345	1895					3.82E+06				
80.0	378	351	2166					3.90E+06				
90.0	382	355	2436					3.94E+06				
100	391	358	2707					4.03E+06				
110	420	361	2978	2971	2985	2978	7.00	4.33E+06	4.25E+06	4.44E+06	4.34E+06	9.55E+04
120	450		3248					4.64E+06				
135	466		3654					4.80E+06				
150	500		4061					5.15E+06				
200	527		5414					5.43E+06				

9. Data of the wall shear stress, the apparent strain rate of LLDPE(L2020F)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 180 ^{o}C in Figure A1c.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	9.66		5.41					9.96E+04					
0.50	30.0		13.5					3.09E+05					
1.00	65.2		27.1					6.72E+05					
3.00	130		81.2					1.34E+06					
5.00	171		135	142	140	139	3.41	1.76E+06	1.70E+06	1.66E+06	1.71E+06	5.13E+04	
7.00	198		189					2.04E+06					
10.0	238		271					2.46E+06					
13.0	254		352					2.62E+06					
17.0	282		460					2.90E+06					
20.0	300		541					3.09E+06					
23.0	316		623					3.26E+06					
27.0	336		731					3.46E+06					
30.0	349		812					3.60E+06					
43.0	345		1164					3.56E+06					
50.0	359		1354					3.70E+06					

9. Data of the wall shear stress, the apparent strain rate of LLDPE(L2020F)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 180 °C in Figure A1c.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	9.66		5.41					9.96E+04					
0.50	30.0		13.5					3.09E+05					
1.00	65.2		27.1					6.72E+05					
3.00	130		81.2					1.34E+06					
5.00	171		135	142	140	139	3.41	1.76E+06	1.70E+06	1.66E+06	1.71E+06	5.13E+04	
7.00	198		189					2.04E+06					
10.0	238		271					2.46E+06					
13.0	254		352					2.62E+06					
17.0	282		460					2.90E+06					
20.0	300		541					3.09E+06					
23.0	316		623					3.26E+06					
27.0	336		731					3.46E+06					
30.0	349		812					3.60E+06					
43.0	345		1164					3.56E+06					
50.0	359		1354					3.70E+06					

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
53.0	370		1435					3.82E+06					
60.0	382	352	1624	1621	1611	1619	6.89	3.94E+06	3.88E+06	3.90E+06	3.91E+06	3.14E+04	3.63E+06
65.0	387	361	1760					3.99E+06					3.72E+06
70.0	392	368	1895					4.04E+06					3.79E+06
110	411	382	2978					4.24E+06					3.94E+06
125	422	391	3384	3378	3378	3380	3.32	4.35E+06	4.30E+06	4.40E+06	4.35E+06	5.00E+04	4.03E+06
150	483		4061					4.98E+06					
200	526		5414					5.42E+06					
230	541		6226					5.57E+06					

10. Data of the wall shear stress, the apparent strain rate of LLDPE(L2020F)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 200 °C in Figure A1d.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	14.4		5.41					1.49E+05					
0.50	31.4		13.5					3.24E+05					
1.00	60.0		27.1					6.18E+05					
3.00	114		81.2					1.18E+06					
5.00	148		135					1.53E+06					
7.00	175		189	192	177	186	8.03	1.81E+06	1.92E+06	2.00E+06	1.91E+06	9.63E+04	
10.0	206		271					2.12E+06					
13.0	231		352					2.38E+06					
17.0	257		460					2.65E+06					
20.0	275		541					2.84E+06					
23.0	291		623					3.00E+06					
27.0	310		731					3.20E+06					
30.0	324		812					3.34E+06					
33.0	339		893					3.49E+06					
37.0	353		1002					3.64E+06					

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
43.0	367		1164					3.78E+06					
47.0	380		1272					3.92E+06					
50.0	386		1354					3.98E+06					
53.0	393		1435					4.05E+06					
57.0	395		1543					4.07E+06					
60.0	397		1624					4.09E+06					
65.0	403		1760					4.15E+06					
70.0	405		1895					4.18E+06					
80.0	403		2166					4.15E+06					
90.0	406		2436					4.18E+06					
100	410		2707					4.22E+06					
105	410	400.21	2842	2835	2833	2837	4.92	4.23E+06	4.18E+06	4.33E+06	4.25E+06	7.69E+04	4.12E+06
110	415	404.65	2978					4.28E+06					4.17E+06
120	421	412.63	3248					4.34E+06					4.25E+06
130	432	419.52	3519					4.45E+06					4.32E+06
140	439	424.51	3790	3778	3792	3787	7.53	4.52E+06	4.44E+06	4.62E+06	4.53E+06	9.01E+04	4.37E+06
150	447		4061					4.60E+06					
170	462		4602					4.76E+06					

11. Data of the wall shear stress, the apparent strain rate of HDPE(H5690S)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 150 ^{o}C in Figure A2a.

Velocity (mm/min	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	49.1	_	5.4					5.05E+05					
0.50	109	_	13.5					1.12E+06					
1.00	149	_	27.1	27.0	26.5	26.9	0.26	1.53E+06	1.51E+06	1.48E+06	1.51E+06	1.66E+04	
2.00	210	_	54.1					2.16E+06					
2.60	225	142	70.4	71.0	68.0	69.8	1.51	2.31E+06	2.28E+06	2.35E+06	2.31E+06	3.50E+04	1.46E+06
3.00	235	145	81.2					2.42E+06					1.49E+06
4.00	238	147	108					2.45E+06					1.51E+06
5.00	240	149	135					2.47E+06					1.54E+06
6.00	263	160	162					2.71E+06					1.65E+06
7.00	271	166	189					2.79E+06					1.71E+06
10.0	278	170	271	268	282	274	7.05	2.86E+06	2.75E+06	2.88E+06	2.83E+06	6.57E+04	1.76E+06
13.0	202	_	352					2.08E+06					
17.0	271	_	460					2.79E+06					
20.0	296	_	541					3.05E+06					

Velocity (mm/min	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
23.0	333	_	623					3.43E+06					
27.0	376	_	731					3.88E+06					
30.0	402	_	812					4.15E+06					
33.0	442	_	893					4.56E+06					
37.0	455	_	1002					4.69E+06					
43.0	468	_	1164					4.82E+06					
47.0	477	_	1272					4.91E+06					
50.0	531	_	1354					5.47E+06					
53.0	604	_	1435					6.22E+06					
70.0	665	_	1895					6.85E+06					
100	788	_	2707					8.12E+06					
150	861	_	4061					8.87E+06					
200	936	_	5414					9.64E+06					
230	950	_	6226					9.79E+06					
250	980	_	6768					1.01E+07					

12. Data of the wall shear stress, the apparent strain rate of HDPE(H5690S)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 160 °C in Figure A2b.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	8.93		5.41					9.20E+04					
0.50	65.2		13.5					6.72E+05					
1.00	150		27.1					1.55E+06					
3.00	200		81.2					2.06E+06					
3.50	223		94.7	91.0	96.0	93.9	2.60	2.30E+06	2.25E+06	2.34E+06	2296055.55	45037.124	
4.00	244		108					2.52E+06					
5.00	279		135					2.88E+06					
7.00	283		189					2.92E+06					
10.0	283		271					2.92E+06					
13.0	285		352					2.93E+06					
17.0	283		460					2.92E+06					
20.0	285		541					2.93E+06					
23.0	293	231	623	615	621	620	4.01	3.02E+06	3.22E+06	3.15E+06	3.13E+06	1.03E+05	2.38E+06
27.0	301	232	731					3.10E+06					2.39E+06
30.0	303	233	812					3.12E+06					2.40E+06

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
33.0	308	235	893					3.18E+06					2.42E+06
37.0	310	237	1002					3.19E+06					2.44E+06
40.0	314	239	1083					3.23E+06					2.46E+06
43.0	318	241	1164					3.28E+06					2.48E+06
47.0	319	246	1272					3.29E+06					2.54E+06
50.0	321	247	1354					3.31E+06					2.55E+06
53.0	327	252	1435					3.37E+06					2.60E+06
57.0	341	254	1543					3.52E+06					2.62E+06
60.0	349	255	1624					3.60E+06					2.63E+06
65.0	405	257	1760					4.17E+06					2.65E+06
70.0	480	258	1895	1887	1892	1891	4.00	4.95E+06	4.88E+06	4.82E+06	4.88E+06	6.27E+04	2.66E+06
100	521		2707					5.37E+06					
150	525		4061					5.41E+06					
200	531		5414					5.47E+06					
230	532		6226					5.48E+06					
250	540		6768					5.57E+06					

13. Data of the wall shear stress, the apparent strain rate of HDPE(H5690S)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 170 °C in Figure A2c.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	25		5.41					2.55E+05					
0.50	61		13.5					6.30E+05					
1.00	112		27.1					1.16E+06					
2.00	183		54.1	52.0	51.0	52.4	1.60	1.88E+06	1.78E+06	1.82E+06	1.83E+06	5.10E+04	
3.00	210		81.2					2.16E+06					
4.00	222		108					2.29E+06					
5.00	231		135					2.39E+06					
6.00	235		162					2.42E+06					
7.00	247	221	189	181	178	183	5.96	2.55E+06	2.51E+06	2.48E+06	2.51E+06	3.41E+04	2.28E+06
10.0	251	223	271					2.58E+06					2.30E+06
13.0	258	226	352					2.66E+06					2.33E+06
17.0	276	233	460					2.84E+06					2.40E+06
20.0	292	237	541					3.01E+06					2.44E+06
23.0	303	242	623					3.12E+06					2.49E+06

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
27.0	314	245	731					3.23E+06					2.52E+06
30.0	322	248	812					3.32E+06					2.56E+06
40.0	360.2	252	1083	1081	1077	1080	2.97	3.71E+06	3.68E+06	3.81E+06	3.73E+06	6.77E+04	2.60E+06
50.0	266.76		1354					2.75E+06					
60.0	287.75		1624					2.97E+06					
70.0	302.98		1895					3.12E+06					
100	375.08		2707					3.87E+06					
150	576.75		4061					5.94E+06					
200	834.46		5414					8.60E+06					
230	965.04		6226					9.95E+06					

14. Data of the wall shear stress, the apparent strain rate of HDPE(H5690S)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 180 °C in Figure A2d.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	30.0		5.41					3.09E+05					
0.50	56.0		13.5					5.77E+05					
1.00	99.5		27.1					1.03E+06					
3.00	198		81.2					2.04E+06					
4.20	221		114	116	121	117	3.73	2.28E+06	2.31E+06	2.21E+06	2.27E+06	5.10E+04	
5.00	253		135					2.61E+06					
7.00	286		189					2.94E+06					
10.0	298		271					3.07E+06					
13.0	305		352					3.15E+06					
17.0	306		460					3.15E+06					
20.0	315		541					3.24E+06					
23.0	315		623					3.24E+06					
27.0	318		731					3.28E+06					
30.0	323	253	812	821	815	816	4.54	3.33E+06	3.11E+06	3.52E+06	3.32E+06	2.05E+05	2.61E+06
33.0	328	255	893					3.38E+06					2.63E+06

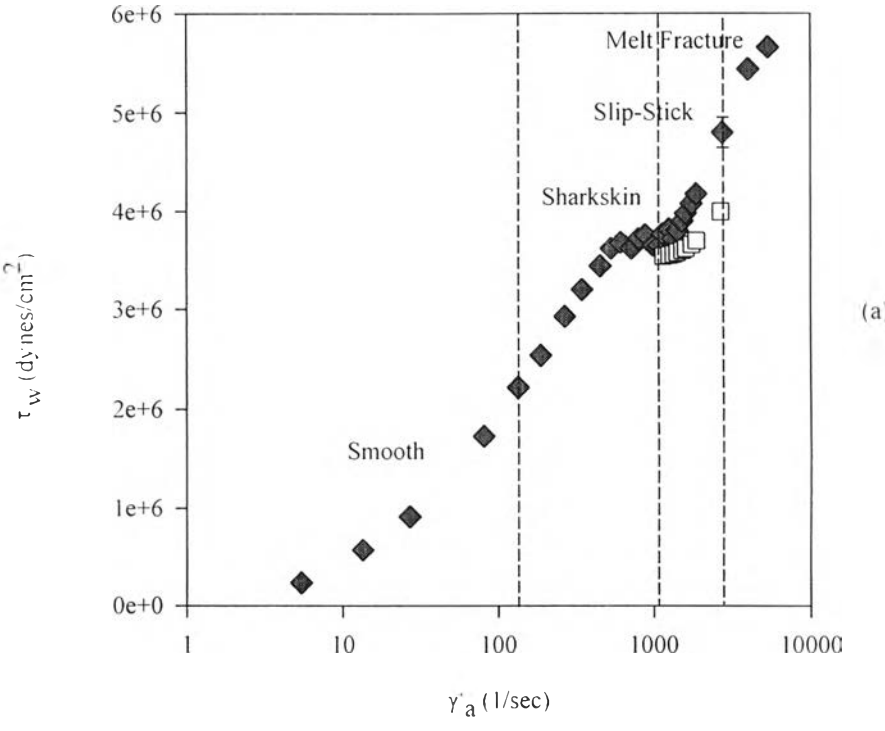
Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
37.0	333	257	1002					3.43E+06					2.65E+06
40.0	334	259	1083					3.44E+06					2.67E+06
43.0	337	262	1164					3.48E+06					2.70E+06
47.0	359	271	1272					3.70E+06					2.79E+06
50.0	378	275	1354					3.89E+06					2.83E+06
53.0	379	277	1435					3.90E+06					2.85E+06
57.0	381	279	1543					3.93E+06					2.88E+06
60.0	386	285	1624	1621	1632	1625.7	5.658	3.97E+06	3.41E+06	3.88E+06	3.75E+06	3.02E+05	2.94E+06
65.0	384		1760					3.96E+06					
70.0	390		1895					4.02E+06					
100	391		2707					4.03E+06					
150	449		4061					4.63E+06					
200	508		5414					5.23E+06					
230	551		6226					5.68E+06					
250	570		6768					5.88E+06					

15. Data of the wall shear stress, the apparent strain rate of HDPE(H5690S)

Die No.614 (d_c = 0.725 mm, l_c = 25.105 mm, l_c/d_c = 33.4) at 200 °C in Figure A2e.

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg.)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
0.20	23.4		5.41					2.41E+05					
0.50	47.7		13.5					4.91E+05					
1.00	83.9		27.1					8.65E+05					
3.00	170		81.2					1.75E+06					
4.00	210		108					2.16E+06					
4.50	217		122	118	121	120	2.01	2.24E+06	2.18E+06	2.32E+06	2.25E+06	7.04E+04	
5.00	226		135					2.33E+06					
7.00	262		189					2.70E+06					
10.0	303		271					3.12E+06					
13.0	334		352					3.44E+06					
17.0	368		460					3.79E+06					
20.0	370	338	541	532	555	543	11.6	3.81E+06	3.62E+06	3.88E+06	3.77E+06	1.35E+05	3.48E+06
23.0	372	340	623					3.83E+06					3.50E+06
27.0	378	342	731					3.90E+06					3.52E+06
30.0	398	345	812					4.10E+06					3.56E+06

Velocity (mm/min)	Load (max) (kg)	Load (min) (kg)	γ_{a1} (1/sec)	γ_{a2} (1/sec)	γ_{a3} (1/sec)	$\gamma_{a(avg.)}$ (1/sec)	SD	τ_{w1}(max) (dynes/cm^2)	τ_{w2} (max) (dynes/cm^2)	τ_{w3} (max) (dynes/cm^2)	$\tau_{w(avg)}$ (max) (dynes/cm^2)	SD	τ_w (min) (dynes/cm^2)
33.0	401	346	893					4.13E+06					3.57E+06
37.0	410	348	1002					4.23E+06					3.59E+06
40.0	416	350	1083					4.29E+06					3.61E+06
43.0	419	352	1164					4.32E+06					3.63E+06
47.0	425	354	1272					4.38E+06					3.65E+06
50.0	432	356	1354					4.45E+06					3.67E+06
53.0	440	358	1435					4.54E+06					3.69E+06
57.0	443	360	1543					4.56E+06					3.71E+06
60.0	446	362	1624					4.60E+06					3.73E+06
65.0	470	364	1760					4.85E+06					3.75E+06
70.0	472	367	1895					4.86E+06					3.78E+06
100	473	369	2707	2715	2800	2741	51.5	4.88E+06	4.92E+06	4.91E+06	4.90E+06	2.14E+04	3.80E+06
150	481		4061					4.96E+06					
200	482		5414					4.97E+06					
230	484		6226					4.99E+06					
250	490		6768					5.05E+06					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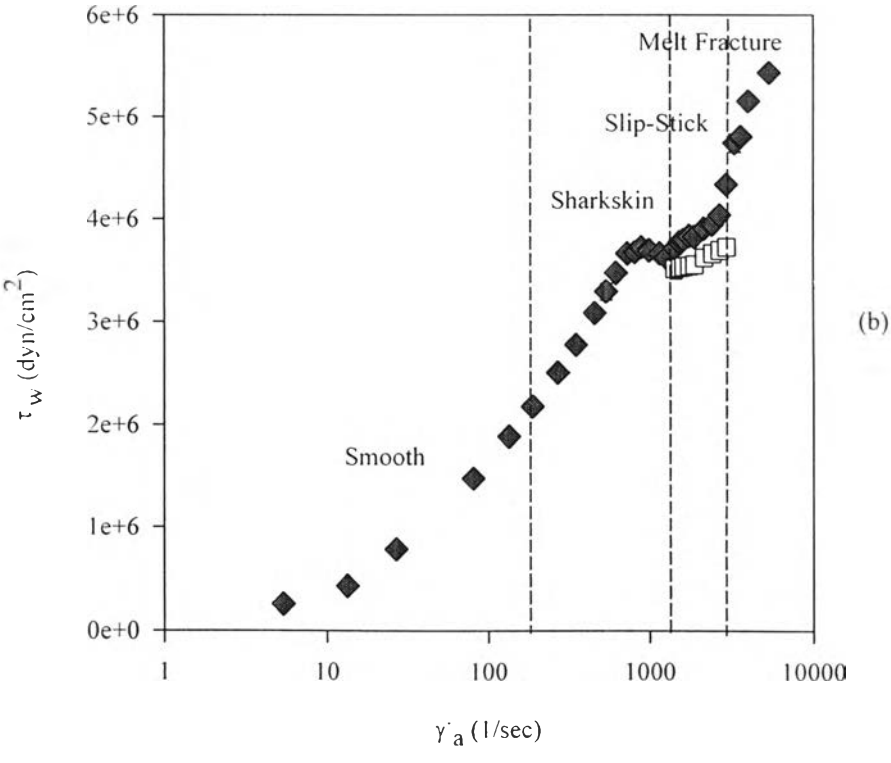
4e+6
3e+6
2e+6
1e+6
0e+0
1
10
100
1000
10000
Melt Fracture
Slip-Stick
Sharkskin
Smooth
τ_w (dynes/cm^2)
γ_a (1/sec)
(a)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4e+6
3e+6
2e+6
1e+6
0e+0
1
10
100
1000
10000
Melt Fracture
Slip-Stick
Sharkskin
Smooth
τ_w (dyn/cm^2)
γ_a (1/sec)
(b)

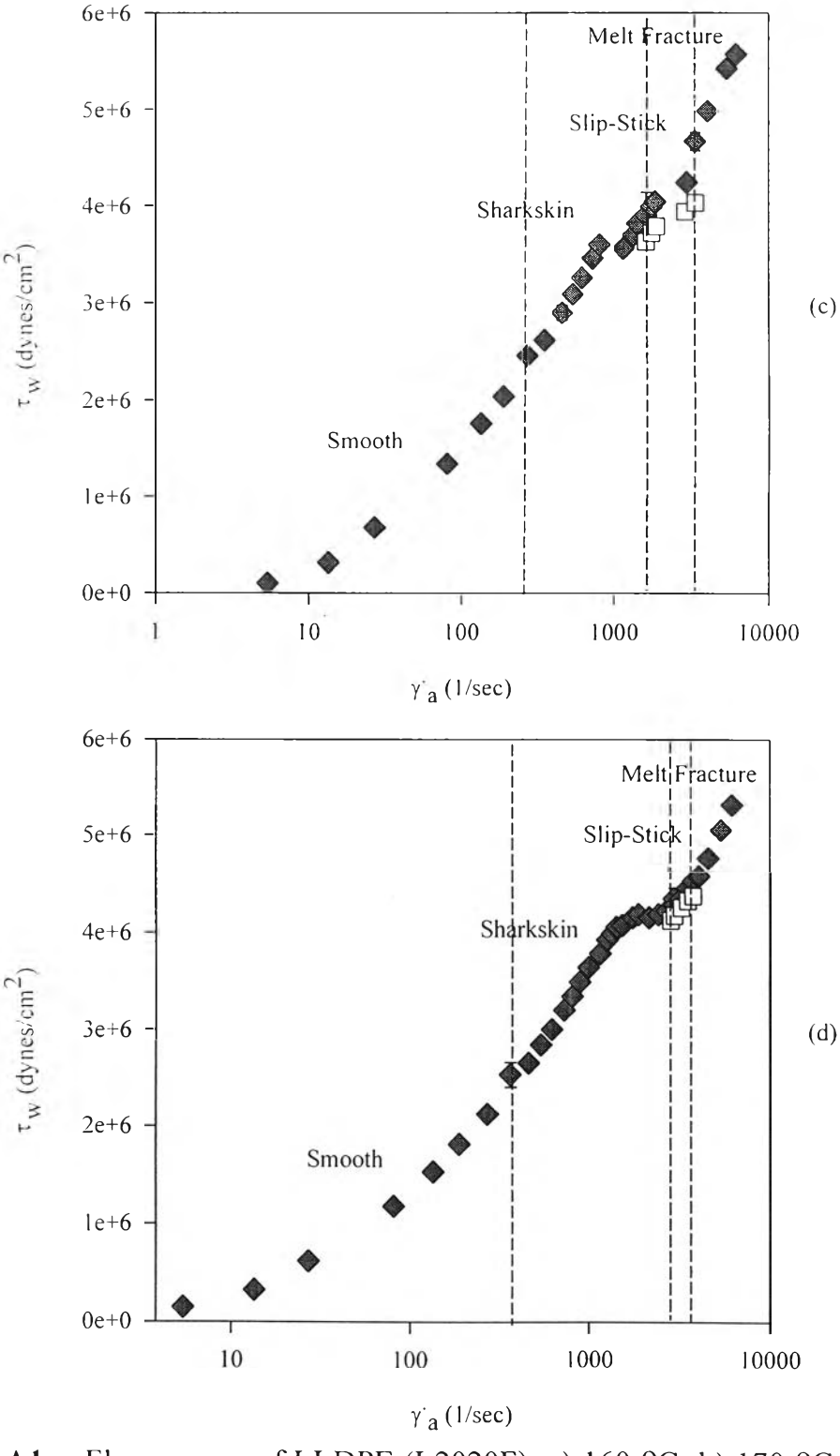
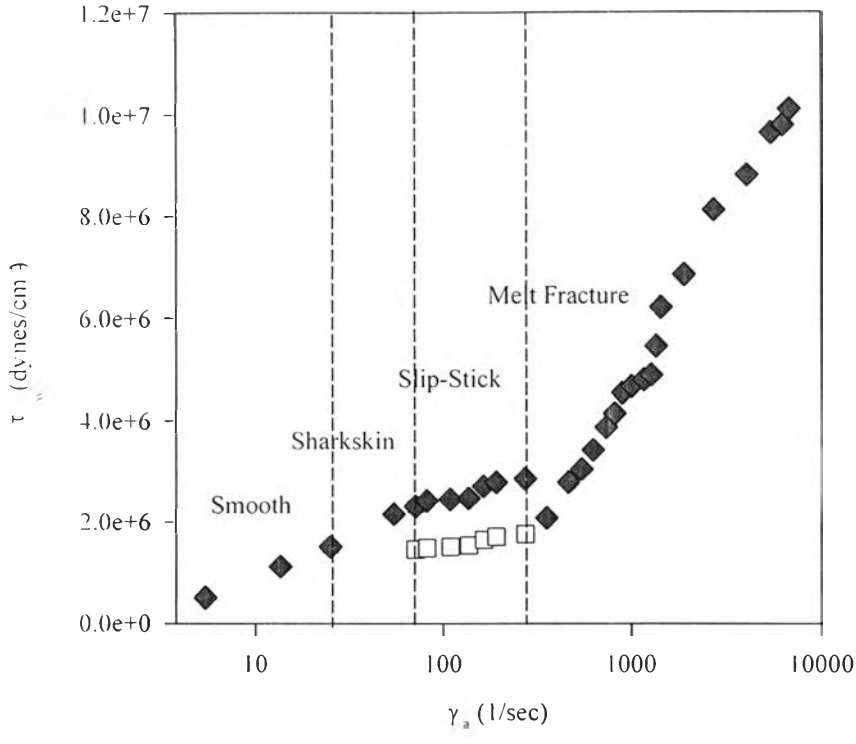
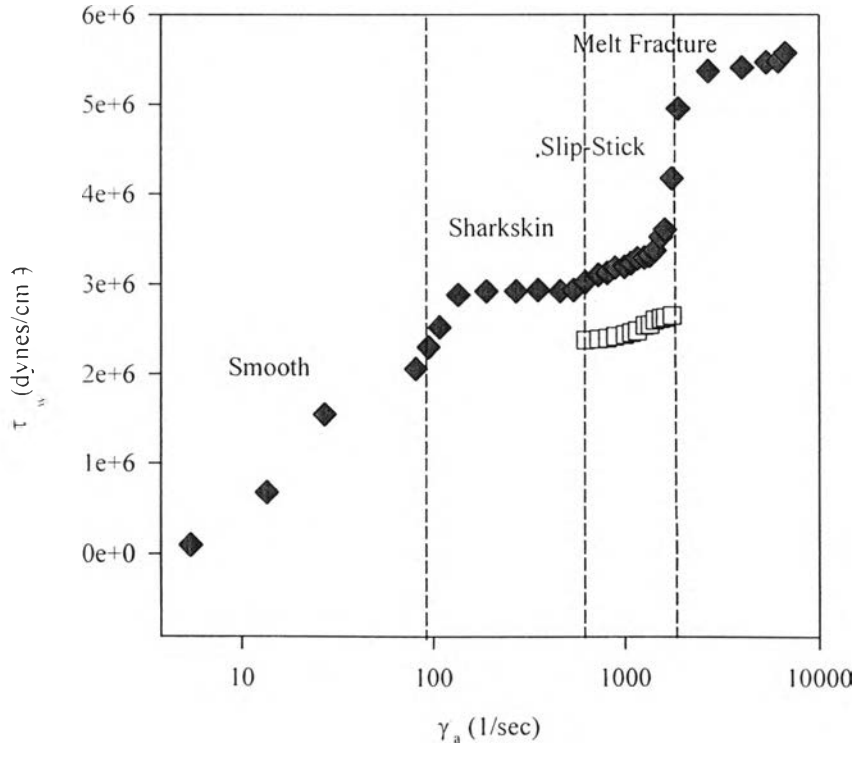


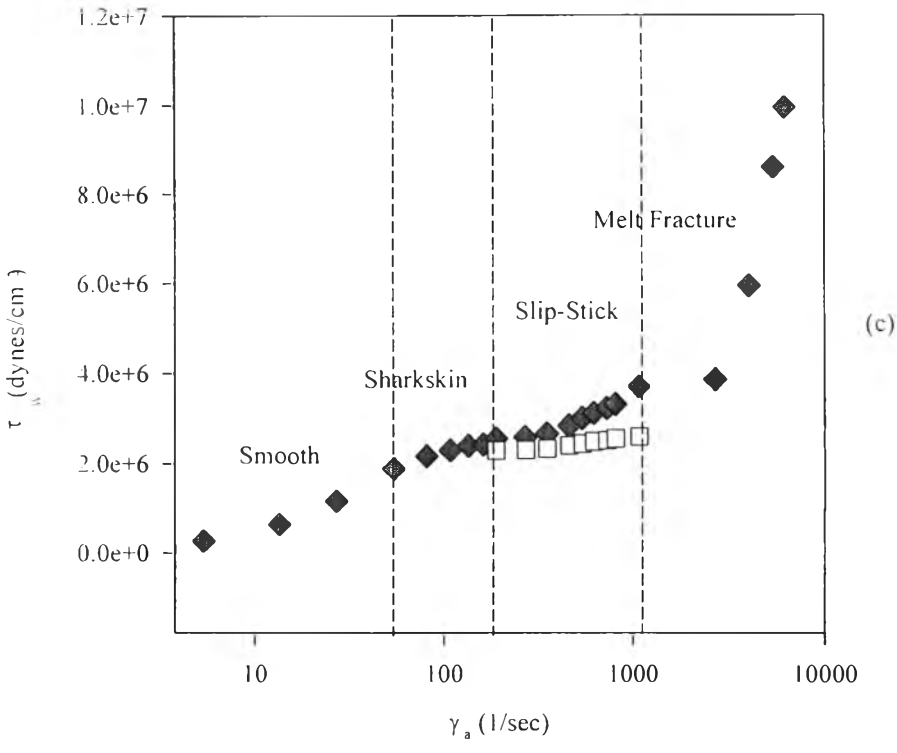
Figure A1 Flow curves of LLDPE (L2020F): a) 160 ^{o}C; b) 170 ^{o}C; c) 180 ^{o}C; d) 200 ^{o}C.


1.2e+7
1.0e+7
8.0e+6
6.0e+6
4.0e+6
2.0e+6
0.0e+0
Melt Fracture
Slip-Stick
Sharkskin
Smooth
10
100
1000
10000
γa (1/sec)

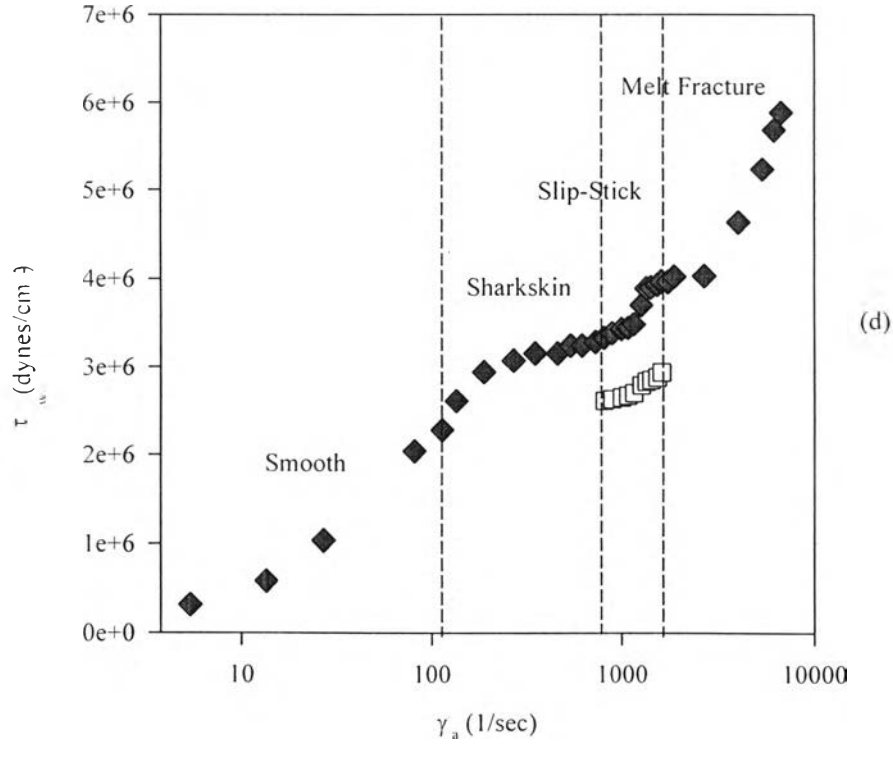
(a)


6e+6
5e+6
4e+6
3e+6
2e+6
1e+6
0e+0
Melt Fracture
Slip-Stick
Sharkskin
Smooth
10
100
1000
10000
γa (1/sec)

(b)


1.2e+7
1.0e+7
8.0e+6
6.0e+6
4.0e+6
2.0e+6
0.0e+0
τ w (dynes/cm²)
Smooth
Sharkskin
Slip-Stick
Melt Fracture
10
100
1000
10000
γ a (1/sec)

(c)


7e+6
6e+6
5e+6
4e+6
3e+6
2e+6
1e+6
0e+0
τ w (dynes/cm²)
Smooth
Sharkskin
Slip-Stick
Melt Fracture
10
100
1000
10000
γ a (1/sec)

(d)

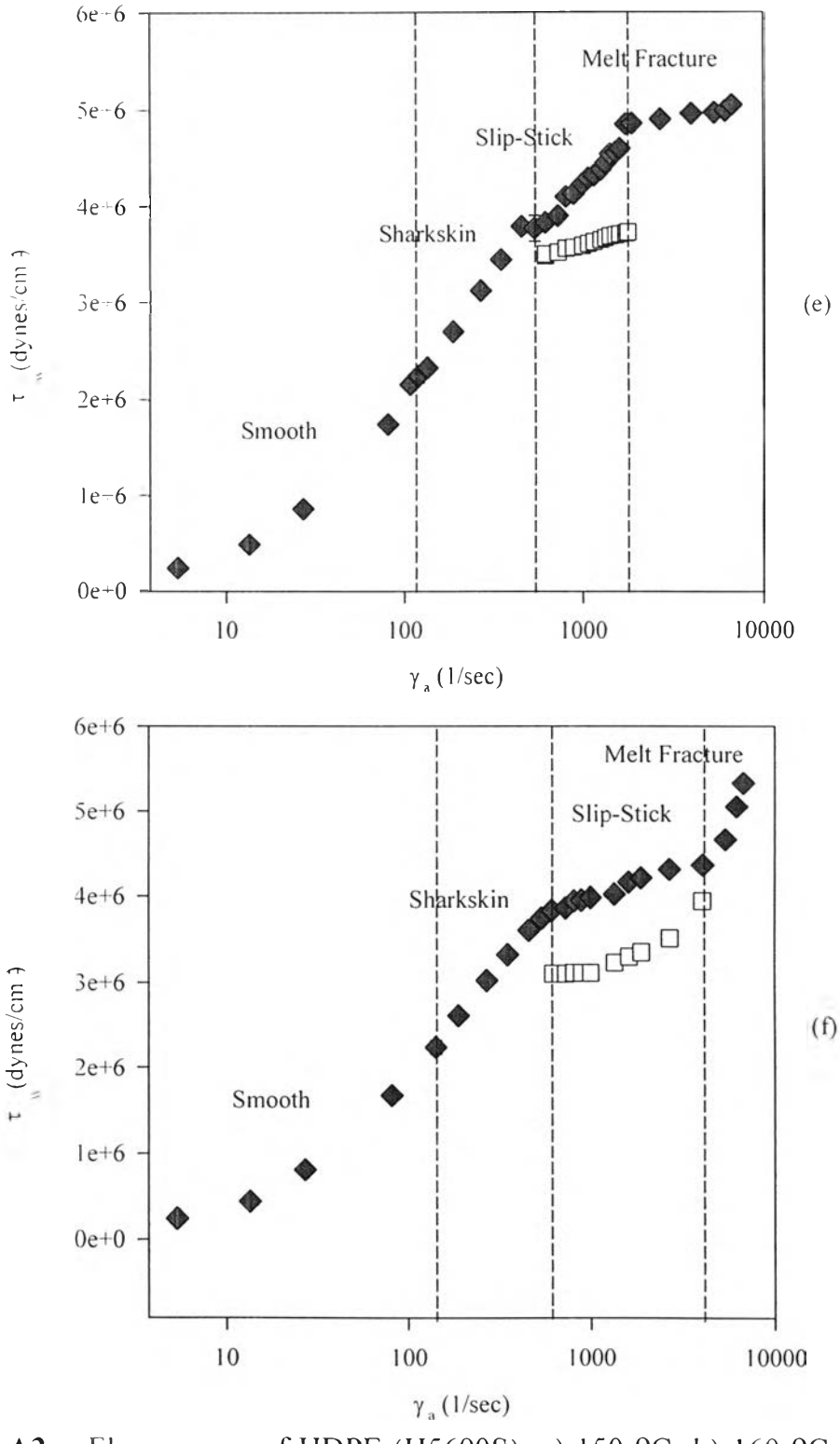


Figure A2 Flow curves of HDPE (H5690S): a) 150 ^{o}C; b) 160 ^{o}C; c) 170 ^{o}C; d) 180 ^{o}C; e) 200 ^{o}C; f) 210 ^{o}C.

17. Data of frequency, storage modulus and loss modulus of LLDPE (L2009F)

Parallel plates 25 mm, gap = 0.599 mm, % strain = 4, 5 point per decade at 190 °C.

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
230	1.00E-01	7.57E+02	3.10E+03	220	1.58E+01	1.07E+05	1.38E+05
230	1.58E-01	1.83E+03	3.67E+03	220	2.51E+01	1.55E+05	1.85E+05
230	2.51E-01	2.64E+03	5.28E+03	220	3.98E+01	2.19E+05	2.41E+05
230	3.98E-01	3.43E+03	7.61E+03	220	6.31E+01	3.04E+05	3.03E+05
230	6.31E-01	4.77E+03	1.11E+04	220	1.00E+02	4.15E+05	3.76E+05
230	1.00E+00	6.57E+03	1.62E+04	210	1.00E-01	7.32E+03	3.01E+03
230	1.58E+00	9.86E+03	2.36E+04	210	1.58E-01	8.03E+03	4.09E+03
230	2.51E+00	1.52E+04	3.44E+04	210	2.51E-01	8.83E+03	5.87E+03
230	3.98E+00	2.40E+04	4.98E+04	210	3.98E-01	9.88E+03	8.39E+03
230	6.31E+00	3.87E+04	7.16E+04	210	6.31E-01	1.15E+04	1.21E+04
230	1.00E+01	6.13E+04	1.02E+05	210	1.00E+00	1.40E+04	1.72E+04
230	1.58E+01	9.39E+04	1.41E+05	210	1.58E+00	1.80E+04	2.46E+04
230	2.51E+01	1.39E+05	1.90E+05	210	2.51E+00	2.43E+04	3.48E+04
230	3.98E+01	2.01E+05	2.48E+05	210	3.98E+00	3.54E+04	4.94E+04
230	6.31E+01	2.83E+05	3.17E+05	210	6.31E+00	5.41E+04	7.01E+04
230	1.00E+02	3.94E+05	3.96E+05	210	1.00E+01	8.17E+04	9.85E+04
220	1.00E-01	4.90E+03	2.80E+03	210	1.58E+01	1.19E+05	1.35E+05
220	1.58E-01	5.52E+03	3.61E+03	210	2.51E+01	1.69E+05	1.80E+05
220	2.51E-01	6.18E+03	5.32E+03	210	3.98E+01	2.35E+05	2.31E+05
220	3.98E-01	7.13E+03	7.68E+03	210	6.31E+01	3.20E+05	2.89E+05
220	6.31E-01	8.46E+03	1.13E+04	210	1.00E+02	4.30E+05	3.54E+05
220	1.00E+00	1.06E+04	1.63E+04	200	1.00E-01	9.60E+03	3.69E+03
220	1.58E+00	1.43E+04	2.36E+04	200	1.58E-01	1.06E+04	5.12E+03
220	2.51E+00	1.99E+04	3.40E+04	200	2.51E-01	1.17E+04	7.07E+03
220	3.98E+00	2.99E+04	4.89E+04	200	3.98E-01	1.32E+04	9.95E+03
220	6.31E+00	4.68E+04	7.04E+04	200	6.31E-01	1.54E+04	1.39E+04
220	1.00E+01	7.20E+04	1.00E+05	200	1.00E+00	1.88E+04	1.93E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
200	1.58E+00	2.37E+04	2.67E+04	180	6.31E-01	2.80E+04	1.91E+04
200	2.51E+00	3.19E+04	3.72E+04	180	1.00E+00	3.31E+04	2.60E+04
200	3.98E+00	4.56E+04	5.22E+04	180	1.58E+00	4.15E+04	3.56E+04
200	6.31E+00	6.69E+04	7.35E+04	180	2.51E+00	5.39E+04	4.92E+04
200	1.00E+01	9.63E+04	1.02E+05	180	3.98E+00	7.09E+04	6.84E+04
200	1.58E+01	1.35E+05	1.38E+05	180	6.31E+00	9.37E+04	9.38E+04
200	2.51E+01	1.87E+05	1.81E+05	180	1.00E+01	1.24E+05	1.26E+05
200	3.98E+01	2.54E+05	2.30E+05	180	1.58E+01	1.65E+05	1.64E+05
200	6.31E+01	3.39E+05	2.84E+05	180	2.51E+01	2.19E+05	2.10E+05
200	1.00E+02	4.48E+05	3.44E+05	180	3.98E+01	2.89E+05	2.61E+05
190	1.00E-01	1.37E+04	4.59E+03	180	6.31E+01	3.80E+05	3.18E+05
190	1.58E-01	1.46E+04	6.72E+03	180	1.00E+02	4.95E+05	3.78E+05
190	2.51E-01	1.64E+04	8.79E+03	170	1.00E-01	2.19E+04	8.12E+03
190	3.98E-01	1.82E+04	1.20E+04	170	1.58E-01	2.37E+04	1.04E+04
190	6.31E-01	2.11E+04	1.61E+04	170	2.51E-01	2.66E+04	1.35E+04
190	1.00E+00	2.53E+04	2.18E+04	170	3.98E-01	2.98E+04	1.76E+04
190	1.58E+00	3.19E+04	2.97E+04	170	6.31E-01	3.41E+04	2.34E+04
190	2.51E+00	4.22E+04	4.10E+04	170	1.00E+00	4.06E+04	3.16E+04
190	3.98E+00	5.85E+04	5.73E+04	170	1.58E+00	4.98E+04	4.31E+04
190	6.31E+00	8.14E+04	8.03E+04	170	2.51E+00	6.23E+04	5.89E+04
190	1.00E+01	1.12E+05	1.10E+05	170	3.98E+00	7.94E+04	7.99E+04
190	1.58E+01	1.52E+05	1.47E+05	170	6.31E+00	1.03E+05	1.07E+05
190	2.51E+01	2.04E+05	1.90E+05	170	1.00E+01	1.35E+05	1.41E+05
190	3.98E+01	2.72E+05	2.38E+05	170	1.58E+01	1.77E+05	1.82E+05
190	6.31E+01	3.60E+05	2.91E+05	170	2.51E+01	2.33E+05	2.30E+05
190	1.00E+02	4.70E+05	3.48E+05	170	3.98E+01	3.06E+05	2.84E+05
180	1.00E-01	1.79E+04	6.46E+03	170	6.31E+01	3.99E+05	3.44E+05
180	1.58E-01	1.92E+04	8.35E+03	170	1.00E+02	5.18E+05	4.10E+05
180	2.51E-01	2.14E+04	1.08E+04	160	1.00E-01	2.66E+04	1.11E+04
180	3.98E-01	2.41E+04	1.44E+04	160	1.58E-01	2.94E+04	1.38E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
160	2.51E-01	3.25E+04	1.75E+04	140	1.00E-01	3.24E+04	1.28E+04
160	3.98E-01	3.65E+04	2.28E+04	140	1.58E-01	3.55E+04	1.63E+04
160	6.31E-01	4.16E+04	3.00E+04	140	2.51E-01	3.93E+04	2.10E+04
160	1.00E+00	4.82E+04	4.00E+04	140	3.98E-01	4.41E+04	2.76E+04
160	1.58E+00	5.76E+04	5.35E+04	140	6.31E-01	5.04E+04	3.69E+04
160	2.51E+00	7.03E+04	7.12E+04	140	1.00E+00	5.91E+04	4.92E+04
160	3.98E+00	8.80E+04	9.43E+04	140	1.58E+00	7.12E+04	6.57E+04
160	6.31E+00	1.13E+05	1.23E+05	140	2.51E+00	8.80E+04	8.71E+04
160	1.00E+01	1.47E+05	1.59E+05	140	3.98E+00	1.11E+05	1.14E+05
160	1.58E+01	1.92E+05	2.02E+05	140	6.31E+00	1.43E+05	1.48E+05
160	2.51E+01	2.52E+05	2.52E+05	140	1.00E+01	1.85E+05	1.89E+05
160	3.98E+01	3.28E+05	3.09E+05	140	1.58E+01	2.41E+05	2.36E+05
160	6.31E+01	4.25E+05	3.72E+05	140	2.51E+01	3.13E+05	2.89E+05
160	1.00E+02	5.50E+05	4.40E+05	140	3.98E+01	4.03E+05	3.48E+05
150	1.00E-01	2.94E+04	1.17E+04	140	6.31E+01	5.16E+05	4.11E+05
150	1.58E-01	3.22E+04	1.46E+04	140	1.00E+02	6.57E+05	4.77E+05
150	2.51E-01	3.56E+04	1.87E+04	130	1.00E-01	3.52E+04	1.45E+04
150	3.98E-01	3.99E+04	2.44E+04	130	1.58E-01	3.87E+04	1.86E+04
150	6.31E-01	4.54E+04	3.24E+04	130	2.51E-01	4.29E+04	2.42E+04
150	1.00E+00	5.29E+04	4.32E+04	130	3.98E-01	4.85E+04	3.20E+04
150	1.58E+00	6.33E+04	5.77E+04	130	6.31E-01	5.60E+04	4.26E+04
150	2.51E+00	7.77E+04	7.68E+04	130	1.00E+00	6.63E+04	5.69E+04
150	3.98E+00	9.77E+04	1.01E+05	130	1.58E+00	8.05E+04	7.58E+04
150	6.31E+00	1.25E+05	1.32E+05	130	2.51E+00	1.00E+05	1.00E+05
150	1.00E+01	1.62E+05	1.69E+05	130	3.98E+00	1.28E+05	1.30E+05
150	1.58E+01	2.12E+05	2.14E+05	130	6.31E+00	1.64E+05	1.67E+05
150	2.51E+01	2.76E+05	2.64E+05	130	1.00E+01	2.14E+05	2.11E+05
150	3.98E+01	3.57E+05	3.21E+05	130	1.58E+01	2.77E+05	2.61E+05
150	6.31E+01	4.60E+05	3.84E+05	130	2.51E+01	3.58E+05	3.17E+05
150	1.00E+02	5.90E+05	4.50E+05	130	3.98E+01	4.58E+05	3.77E+05

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
130	6.31E+01	5.82E+05	4.41E+05	126	2.51E+01	3.78E+05	3.27E+05
130	1.00E+02	7.34E+05	5.04E+05	126	3.98E+01	4.82E+05	3.88E+05
128	1.00E-01	3.68E+04	1.50E+04	126	6.31E+01	6.09E+05	4.50E+05
128	1.58E-01	4.02E+04	1.91E+04	126	1.00E+02	7.65E+05	5.12E+05
128	2.51E-01	4.46E+04	2.49E+04	124	1.00E-01	3.86E+04	1.59E+04
128	3.98E-01	5.03E+04	3.29E+04	124	1.58E-01	4.22E+04	2.04E+04
128	6.31E-01	5.80E+04	4.40E+04	124	2.51E-01	4.69E+04	2.67E+04
128	1.00E+00	6.86E+04	5.85E+04	124	3.98E-01	5.30E+04	3.53E+04
128	1.58E+00	8.32E+04	7.80E+04	124	6.31E-01	6.12E+04	4.70E+04
128	2.51E+00	1.04E+05	1.03E+05	124	1.00E+00	7.27E+04	6.28E+04
128	3.98E+00	1.32E+05	1.34E+05	124	1.58E+00	8.85E+04	8.32E+04
128	6.31E+00	1.70E+05	1.71E+05	124	2.51E+00	1.10E+05	1.09E+05
128	1.00E+01	2.20E+05	2.16E+05	124	3.98E+00	1.41E+05	1.42E+05
128	1.58E+01	2.85E+05	2.66E+05	124	6.31E+00	1.81E+05	1.81E+05
128	2.51E+01	3.68E+05	3.22E+05	124	1.00E+01	2.35E+05	2.27E+05
128	3.98E+01	4.70E+05	3.82E+05	124	1.58E+01	3.04E+05	2.78E+05
128	6.31E+01	5.95E+05	4.45E+05	124	2.51E+01	3.90E+05	3.35E+05
128	1.00E+02	7.49E+05	5.07E+05	124	3.98E+01	4.97E+05	3.95E+05
126	1.00E-01	3.77E+04	1.54E+04	124	6.31E+01	6.27E+05	4.57E+05
126	1.58E-01	4.13E+04	1.97E+04	124	1.00E+02	7.86E+05	5.18E+05
126	2.51E-01	4.57E+04	2.57E+04	122	1.00E-01	3.95E+04	1.65E+04
126	3.98E-01	5.15E+04	3.40E+04	122	1.58E-01	4.31E+04	2.11E+04
126	6.31E-01	5.95E+04	4.52E+04	122	2.51E-01	4.79E+04	2.76E+04
126	1.00E+00	7.04E+04	6.04E+04	122	3.98E-01	5.43E+04	3.66E+04
126	1.58E+00	8.57E+04	8.02E+04	122	6.31E-01	6.29E+04	4.86E+04
126	2.51E+00	1.07E+05	1.06E+05	122	1.00E+00	7.48E+04	6.50E+04
126	3.98E+00	1.36E+05	1.37E+05	122	1.58E+00	9.13E+04	8.61E+04
126	6.31E+00	1.75E+05	1.76E+05	122	2.51E+00	1.14E+05	1.13E+05
126	1.00E+01	2.27E+05	2.21E+05	122	3.98E+00	1.46E+05	1.46E+05
126	1.58E+01	2.93E+05	2.71E+05	122	6.31E+00	1.88E+05	1.86E+05

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
122	1.00E+01	2.43E+05	2.32E+05	118	3.98E+00	6.69E+06	3.41E+06
122	1.58E+01	3.14E+05	2.85E+05	118	6.31E+00	7.80E+06	3.80E+06
122	2.51E+01	4.03E+05	3.42E+05	118	1.00E+01	9.06E+06	4.14E+06
122	3.98E+01	5.13E+05	4.03E+05	118	2.51E+01	1.20E+07	4.37E+06
122	6.31E+01	6.45E+05	4.64E+05	118	3.98E+01	1.39E+07	3.98E+06
122	1.00E+02	8.07E+05	5.25E+05	118	6.31E+01	1.59E+07	2.82E+06
120	1.00E-01	4.06E+04	1.76E+04	118	1.00E+02	1.77E+07	2.70E+05
120	1.58E-01	4.47E+04	2.34E+04	116	1.00E-01	3.43E+06	1.28E+06
120	2.51E-01	5.04E+04	3.17E+04	116	1.58E-01	3.70E+06	1.39E+06
120	3.98E-01	5.81E+04	4.31E+04	116	2.51E-01	4.19E+06	1.60E+06
120	6.31E-01	6.87E+04	5.84E+04	116	3.98E-01	4.61E+06	1.85E+06
120	1.00E+00	8.34E+04	7.92E+04	116	6.31E-01	5.10E+06	2.10E+06
120	1.58E+00	1.04E+05	1.06E+05	116	1.00E+00	5.74E+06	2.36E+06
120	2.51E+00	1.33E+05	1.40E+05	116	1.58E+00	6.39E+06	2.59E+06
120	3.98E+00	1.73E+05	1.81E+05	116	2.51E+00	7.11E+06	2.82E+06
120	6.31E+00	2.26E+05	2.31E+05	116	3.98E+00	7.89E+06	2.93E+06
120	1.00E+01	2.97E+05	2.88E+05	116	6.31E+00	8.83E+06	3.09E+06
120	1.58E+01	3.87E+05	3.53E+05	116	1.00E+01	9.79E+06	3.10E+06
120	2.51E+01	5.01E+05	4.23E+05	116	1.58E+01	1.08E+07	3.00E+06
120	3.98E+01	6.40E+05	4.96E+05	116	2.51E+01	1.18E+07	2.69E+06
120	6.31E+01	8.08E+05	5.70E+05	116	3.98E+01	1.29E+07	2.10E+06
120	1.00E+02	1.02E+06	6.41E+05	116	6.31E+01	1.38E+07	1.03E+06
118	1.00E-01	1.48E+06	5.85E+05	116	1.00E+02	1.44E+07	0.00E+00
118	1.58E-01	1.78E+06	9.51E+05	114	1.00E-01	2.72E+06	7.05E+05
118	2.51E-01	2.41E+06	1.26E+06	114	1.58E-01	2.96E+06	8.19E+05
118	3.98E-01	2.98E+06	1.57E+06	114	2.51E-01	3.26E+06	9.26E+05
118	6.31E-01	3.54E+06	1.89E+06	114	3.98E-01	3.57E+06	1.03E+06
118	1.00E+00	4.15E+06	2.25E+06	114	6.31E-01	3.91E+06	1.13E+06
118	1.58E+00	4.87E+06	2.61E+06	114	1.00E+00	4.31E+06	1.23E+06
118	2.51E+00	5.67E+06	3.01E+06	114	1.58E+00	4.70E+06	1.29E+06

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
114	2.51E+00	5.11E+06	1.32E+06	110	1.00E+00	4.03E+06	7.16E+05
114	3.98E+00	5.63E+06	1.33E+06	110	1.58E+00	4.28E+06	7.04E+05
114	6.31E+00	6.10E+06	1.29E+06	110	2.51E+00	4.51E+06	6.72E+05
114	1.00E+01	6.56E+06	1.22E+06	110	3.98E+00	4.74E+06	6.25E+05
114	1.58E+01	7.07E+06	1.10E+06	110	6.31E+00	4.95E+06	5.72E+05
114	2.51E+01	7.53E+06	9.10E+05	110	1.00E+01	5.19E+06	5.05E+05
114	3.98E+01	7.96E+06	5.94E+05	110	1.58E+01	5.40E+06	4.13E+05
114	6.31E+01	8.18E+06	1.31E+05	110	2.51E+01	5.60E+06	2.96E+05
114	1.00E+02	8.26E+06	0.00E+00	110	3.98E+01	5.78E+06	1.33E+05
112	1.00E-01	2.81E+06	6.11E+05	110	6.31E+01	5.91E+06	0.00E+00
112	1.58E-01	3.03E+06	6.96E+05	110	1.00E+02	5.99E+06	0.00E+00
112	2.51E-01	3.28E+06	7.66E+05				
112	3.98E-01	3.54E+06	8.32E+05				
112	6.31E-01	3.79E+06	8.55E+05				
112	1.00E+00	4.05E+06	8.69E+05				
112	1.58E+00	4.33E+06	8.56E+05				
112	2.51E+00	4.62E+06	8.35E+05				
112	3.98E+00	4.89E+06	7.77E+05				
112	6.31E+00	5.12E+06	6.89E+05				
112	1.00E+01	5.32E+06	5.92E+05				
112	1.58E+01	5.50E+06	4.80E+05				
112	2.51E+01	5.65E+06	3.33E+05				
112	3.98E+01	5.77E+06	1.40E+05				
112	6.31E+01	5.85E+06	0.00E+00				
112	1.00E+02	5.81E+06	0.00E+00				
110	1.00E-01	2.90E+06	5.68E+05				
110	1.58E-01	3.14E+06	6.37E+05				
110	2.51E-01	3.35E+06	6.72E+05				
110	3.98E-01	3.56E+06	6.89E+05				
110	6.31E-01	3.80E+06	7.17E+05				

18. Data of frequency, storage modulus and loss modulus of LLDPE (L2020F)

Parallel plates 25 mm, gap = 0.610 mm, % strain = 0.5, 5 point per decade at 190 °C.

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
230	1.00E-01	1.52E+03	4.96E+03	220	1.58E+01	2.19E+05	3.49E+05
230	1.58E-01	2.43E+03	7.42E+03	220	2.51E+01	3.18E+05	4.70E+05
230	2.51E-01	3.65E+03	1.10E+04	220	3.98E+01	4.55E+05	6.20E+05
230	3.98E-01	5.32E+03	1.60E+04	220	6.31E+01	6.47E+05	8.03E+05
230	6.31E-01	8.33E+03	2.35E+04	220	1.00E+02	9.17E+05	1.03E+06
230	1.00E+00	1.26E+04	3.42E+04	210	1.00E-01	9.30E+03	8.29E+03
230	1.58E+00	1.94E+04	4.94E+04	210	1.58E-01	1.11E+04	1.15E+04
230	2.51E+00	3.06E+04	7.14E+04	210	2.51E-01	1.32E+04	1.64E+04
230	3.98E+00	4.93E+04	1.03E+05	210	3.98E-01	1.60E+04	2.35E+04
230	6.31E+00	7.92E+04	1.49E+05	210	6.31E-01	2.01E+04	3.37E+04
230	1.00E+01	1.24E+05	2.12E+05	210	1.00E+00	2.66E+04	4.83E+04
230	1.58E+01	1.88E+05	2.97E+05	210	1.58E+00	3.64E+04	6.93E+04
230	2.51E+01	2.77E+05	4.06E+05	210	2.51E+00	5.09E+04	9.82E+04
230	3.98E+01	4.00E+05	5.41E+05	210	3.98E+00	7.34E+04	1.39E+05
230	6.31E+01	5.71E+05	7.07E+05	210	6.31E+00	1.06E+05	1.93E+05
230	1.00E+02	8.14E+05	9.15E+05	210	1.00E+01	1.54E+05	2.66E+05
220	1.00E-01	4.03E+03	6.47E+03	210	1.58E+01	2.24E+05	3.60E+05
220	1.58E-01	5.23E+03	9.37E+03	210	2.51E+01	3.21E+05	4.80E+05
220	2.51E-01	6.74E+03	1.37E+04	210	3.98E+01	4.56E+05	6.28E+05
220	3.98E-01	9.20E+03	2.00E+04	210	6.31E+01	6.45E+05	8.11E+05
220	6.31E-01	1.28E+04	2.89E+04	210	1.00E+02	9.11E+05	1.03E+06
220	1.00E+00	1.82E+04	4.19E+04	200	1.00E-01	8.40E+02	4.71E+03
220	1.58E+00	2.68E+04	6.04E+04	200	1.58E-01	1.51E+03	6.93E+03
220	2.51E+00	4.01E+04	8.66E+04	200	2.51E-01	2.38E+03	1.04E+04
220	3.98E+00	6.11E+04	1.24E+05	200	3.98E-01	4.00E+03	1.54E+04
220	6.31E+00	9.71E+04	1.78E+05	200	6.31E-01	6.51E+03	2.27E+04
220	1.00E+01	1.48E+05	2.53E+05	200	1.00E+00	1.07E+04	3.32E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
200	1.58E+00	1.71E+04	4.80E+04	180	6.31E-01	7.44E+03	2.01E+04
200	2.51E+00	2.78E+04	6.95E+04	180	1.00E+00	1.13E+04	2.87E+04
200	3.98E+00	4.42E+04	9.91E+04	180	1.58E+00	1.71E+04	4.06E+04
200	6.31E+00	7.02E+04	1.41E+05	180	2.51E+00	2.62E+04	5.71E+04
200	1.00E+01	1.09E+05	1.98E+05	180	3.98E+00	3.99E+04	7.98E+04
200	1.58E+01	1.65E+05	2.71E+05	180	6.31E+00	6.06E+04	1.11E+05
200	2.51E+01	2.44E+05	3.66E+05	180	1.00E+01	9.09E+04	1.52E+05
200	3.98E+01	3.53E+05	4.82E+05	180	1.58E+01	1.34E+05	2.05E+05
200	6.31E+01	5.03E+05	6.21E+05	180	2.51E+01	1.94E+05	2.71E+05
200	1.00E+02	7.10E+05	7.88E+05	180	3.98E+01	2.75E+05	3.52E+05
190	1.00E-01	1.33E+03	5.47E+03	180	6.31E+01	3.85E+05	4.48E+05
190	1.58E-01	1.94E+03	7.92E+03	180	1.00E+02	5.32E+05	5.60E+05
190	2.51E-01	3.24E+03	1.15E+04	170	1.00E-01	1.61E+03	4.15E+03
190	3.98E-01	5.12E+03	1.67E+04	170	1.58E-01	2.22E+03	5.82E+03
190	6.31E-01	8.09E+03	2.44E+04	170	2.51E-01	3.23E+03	8.18E+03
190	1.00E+00	1.25E+04	3.50E+04	170	3.98E-01	4.69E+03	1.16E+04
190	1.58E+00	1.97E+04	5.02E+04	170	6.31E-01	6.90E+03	1.64E+04
190	2.51E+00	3.08E+04	7.13E+04	170	1.00E+00	1.02E+04	2.30E+04
190	3.98E+00	4.76E+04	1.01E+05	170	1.58E+00	1.50E+04	3.22E+04
190	6.31E+00	7.32E+04	1.41E+05	170	2.51E+00	2.23E+04	4.49E+04
190	1.00E+01	1.12E+05	1.94E+05	170	3.98E+00	3.33E+04	6.20E+04
190	1.58E+01	1.66E+05	2.64E+05	170	6.31E+00	4.95E+04	8.50E+04
190	2.51E+01	2.42E+05	3.52E+05	170	1.00E+01	7.34E+04	1.15E+05
190	3.98E+01	3.47E+05	4.61E+05	170	1.58E+01	1.08E+05	1.55E+05
190	6.31E+01	4.89E+05	5.89E+05	170	2.51E+01	1.55E+05	2.04E+05
190	1.00E+02	6.85E+05	7.43E+05	170	3.98E+01	2.18E+05	2.63E+05
180	1.00E-01	1.49E+03	5.02E+03	170	6.31E+01	3.02E+05	3.33E+05
180	1.58E-01	2.13E+03	6.99E+03	170	1.00E+02	4.09E+05	4.10E+05
180	2.51E-01	3.14E+03	9.85E+03	160	1.00E-01	2.27E+03	5.03E+03
180	3.98E-01	4.89E+03	1.42E+04	160	1.58E-01	3.05E+03	7.03E+03

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
160	2.51E-01	4.41E+03	9.82E+03	140	1.00E-01	2.73E+03	4.61E+03
160	3.98E-01	6.38E+03	1.40E+04	140	1.58E-01	3.59E+03	6.30E+03
160	6.31E-01	9.18E+03	1.95E+04	140	2.51E-01	4.78E+03	8.75E+03
160	1.00E+00	1.33E+04	2.73E+04	140	3.98E-01	6.55E+03	1.21E+04
160	1.58E+00	1.94E+04	3.80E+04	140	6.31E-01	9.23E+03	1.67E+04
160	2.51E+00	2.86E+04	5.26E+04	140	1.00E+00	1.30E+04	2.29E+04
160	3.98E+00	4.22E+04	7.23E+04	140	1.58E+00	1.82E+04	3.13E+04
160	6.31E+00	6.20E+04	9.86E+04	140	2.51E+00	2.60E+04	4.26E+04
160	1.00E+01	9.07E+04	1.33E+05	140	3.98E+00	3.72E+04	5.75E+04
160	1.58E+01	1.31E+05	1.76E+05	140	6.31E+00	5.34E+04	7.69E+04
160	2.51E+01	1.85E+05	2.29E+05	140	1.00E+01	7.67E+04	1.02E+05
160	3.98E+01	2.57E+05	2.93E+05	140	1.58E+01	1.09E+05	1.33E+05
160	6.31E+01	3.51E+05	3.66E+05	140	2.51E+01	1.53E+05	1.72E+05
160	1.00E+02	4.74E+05	4.50E+05	140	3.98E+01	2.10E+05	2.15E+05
150	1.00E-01	2.54E+03	4.74E+03	140	6.31E+01	2.82E+05	2.64E+05
150	1.58E-01	3.42E+03	6.54E+03	140	1.00E+02	3.74E+05	3.19E+05
150	2.51E-01	4.72E+03	9.15E+03	130	1.00E-01	2.87E+03	4.67E+03
150	3.98E-01	6.54E+03	1.27E+04	130	1.58E-01	3.84E+03	6.37E+03
150	6.31E-01	9.17E+03	1.77E+04	130	2.51E-01	5.11E+03	8.70E+03
150	1.00E+00	1.29E+04	2.45E+04	130	3.98E-01	6.95E+03	1.20E+04
150	1.58E+00	1.86E+04	3.38E+04	130	6.31E-01	9.59E+03	1.65E+04
150	2.51E+00	2.68E+04	4.64E+04	130	1.00E+00	1.33E+04	2.25E+04
150	3.98E+00	3.89E+04	6.32E+04	130	1.58E+00	1.87E+04	3.06E+04
150	6.31E+00	5.65E+04	8.54E+04	130	2.51E+00	2.65E+04	4.13E+04
150	1.00E+01	8.20E+04	1.14E+05	130	3.98E+00	3.77E+04	5.52E+04
150	1.58E+01	1.17E+05	1.50E+05	130	6.31E+00	5.34E+04	7.32E+04
150	2.51E+01	1.65E+05	1.95E+05	130	1.00E+01	7.59E+04	9.57E+04
150	3.98E+01	2.27E+05	2.46E+05	130	1.58E+01	1.07E+05	1.24E+05
150	6.31E+01	3.08E+05	3.06E+05	130	2.51E+01	1.49E+05	1.58E+05
150	1.00E+02	4.13E+05	3.73E+05	130	3.98E+01	2.02E+05	1.96E+05

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
130	6.31E+01	2.69E+05	2.38E+05	126	2.51E+01	1.47E+05	1.51E+05
130	1.00E+02	3.53E+05	2.84E+05	126	3.98E+01	1.98E+05	1.86E+05
128	1.00E-01	2.96E+03	4.68E+03	126	6.31E+01	2.61E+05	2.25E+05
128	1.58E-01	3.84E+03	6.36E+03	126	1.00E+02	3.41E+05	2.67E+05
128	2.51E-01	5.10E+03	8.66E+03	124	1.00E-01	3.08E+03	4.69E+03
128	3.98E-01	6.91E+03	1.19E+04	124	1.58E-01	3.97E+03	6.41E+03
128	6.31E-01	9.49E+03	1.62E+04	124	2.51E-01	5.25E+03	8.65E+03
128	1.00E+00	1.32E+04	2.21E+04	124	3.98E-01	7.12E+03	1.19E+04
128	1.58E+00	1.86E+04	3.01E+04	124	6.31E-01	9.77E+03	1.62E+04
128	2.51E+00	2.64E+04	4.05E+04	124	1.00E+00	1.36E+04	2.21E+04
128	3.98E+00	3.73E+04	5.39E+04	124	1.58E+00	1.90E+04	2.99E+04
128	6.31E+00	5.29E+04	7.12E+04	124	2.51E+00	2.68E+04	4.01E+04
128	1.00E+01	7.52E+04	9.32E+04	124	3.98E+00	3.80E+04	5.34E+04
128	1.58E+01	1.06E+05	1.21E+05	124	6.31E+00	5.37E+04	7.03E+04
128	2.51E+01	1.47E+05	1.53E+05	124	1.00E+01	7.64E+04	9.21E+04
128	3.98E+01	1.98E+05	1.89E+05	124	1.58E+01	1.07E+05	1.19E+05
128	6.31E+01	2.63E+05	2.30E+05	124	2.51E+01	1.48E+05	1.50E+05
128	1.00E+02	3.44E+05	2.73E+05	124	3.98E+01	1.98E+05	1.84E+05
126	1.00E-01	2.99E+03	4.59E+03	124	6.31E+01	2.62E+05	2.22E+05
126	1.58E-01	3.86E+03	6.31E+03	124	1.00E+02	3.40E+05	2.63E+05
126	2.51E-01	5.15E+03	8.63E+03	122	1.00E-01	3.08E+03	4.68E+03
126	3.98E-01	7.00E+03	1.19E+04	122	1.58E-01	4.10E+03	6.37E+03
126	6.31E-01	9.62E+03	1.62E+04	122	2.51E-01	5.41E+03	8.78E+03
126	1.00E+00	1.34E+04	2.21E+04	122	3.98E-01	7.52E+03	1.21E+04
126	1.58E+00	1.88E+04	2.99E+04	122	6.31E-01	1.01E+04	1.65E+04
126	2.51E+00	2.66E+04	4.02E+04	122	1.00E+00	1.40E+04	2.25E+04
126	3.98E+00	3.75E+04	5.35E+04	122	1.58E+00	1.96E+04	3.04E+04
126	6.31E+00	5.30E+04	7.06E+04	122	2.51E+00	2.77E+04	4.09E+04
126	1.00E+01	7.53E+04	9.22E+04	122	3.98E+00	3.91E+04	5.42E+04
126	1.58E+01	1.06E+05	1.19E+05	122	6.31E+00	5.56E+04	7.15E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
122	1.00E+01	7.86E+04	9.30E+04	118	3.98E+00	3.51E+06	1.94E+06
122	1.58E+01	1.09E+05	1.19E+05	118	6.31E+00	4.14E+06	2.19E+06
122	2.51E+01	1.49E+05	1.50E+05	118	1.00E+01	4.85E+06	2.44E+06
122	3.98E+01	2.00E+05	1.83E+05	118	1.58E+01	5.67E+06	2.67E+06
122	6.31E+01	2.63E+05	2.20E+05	118	2.51E+01	6.61E+06	2.83E+06
122	1.00E+02	3.42E+05	2.60E+05	118	3.98E+01	7.68E+06	2.84E+06
120	1.00E-01	3.34E+03	5.31E+03	118	6.31E+01	8.95E+06	2.60E+06
120	1.58E-01	4.70E+03	8.10E+03	118	1.00E+02	1.04E+07	1.81E+06
120	2.51E-01	6.94E+03	1.21E+04	116	1.00E-01	1.86E+06	7.53E+05
120	3.98E-01	1.01E+04	1.77E+04	116	1.58E-01	2.13E+06	9.27E+05
120	6.31E-01	1.49E+04	2.53E+04	116	2.51E-01	2.41E+06	1.11E+06
120	1.00E+00	2.20E+04	3.57E+04	116	3.98E-01	2.73E+06	1.31E+06
120	1.58E+00	3.23E+04	4.94E+04	116	6.31E-01	3.12E+06	1.55E+06
120	2.51E+00	4.69E+04	6.73E+04	116	1.00E+00	3.56E+06	1.82E+06
120	3.98E+00	6.84E+04	9.09E+04	116	1.58E+00	4.10E+06	2.10E+06
120	6.31E+00	9.98E+04	1.21E+05	116	2.51E+00	4.73E+06	2.40E+06
120	1.00E+01	1.43E+05	1.59E+05	116	3.98E+00	5.46E+06	2.69E+06
120	1.58E+01	1.99E+05	2.03E+05	116	6.31E+00	6.29E+06	3.00E+06
120	2.51E+01	2.71E+05	2.53E+05	116	1.00E+01	7.27E+06	3.29E+06
120	3.98E+01	3.61E+05	3.08E+05	116	1.58E+01	8.44E+06	3.52E+06
120	6.31E+01	4.72E+05	3.66E+05	116	2.51E+01	9.97E+06	3.58E+06
120	1.00E+02	6.10E+05	4.26E+05	116	3.98E+01	1.15E+07	3.33E+06
118	1.00E-01	7.29E+05	3.97E+05	116	6.31E+01	1.31E+07	2.55E+06
118	1.58E-01	1.09E+06	5.63E+05	116	1.00E+02	1.47E+07	6.63E+05
118	2.51E-01	1.35E+06	7.10E+05	114	1.00E-01	2.73E+06	1.06E+06
118	3.98E-01	1.60E+06	8.64E+05	114	1.58E-01	3.09E+06	1.30E+06
118	6.31E-01	1.86E+06	1.04E+06	114	2.51E-01	3.48E+06	1.56E+06
118	1.00E+00	2.17E+06	1.23E+06	114	3.98E-01	3.92E+06	1.84E+06
118	1.58E+00	2.54E+06	1.44E+06	114	6.31E-01	4.44E+06	2.14E+06
118	2.51E+00	2.98E+06	1.69E+06	114	1.00E+00	5.01E+06	2.46E+06

Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
114	1.58E+00	5.72E+06	2.81E+06	110	6.31E-01	7.76E+06	3.59E+06
114	2.51E+00	6.58E+06	3.20E+06	110	1.00E+00	8.97E+06	4.15E+06
114	3.98E+00	7.55E+06	3.53E+06	110	1.58E+00	1.01E+07	4.66E+06
114	6.31E+00	8.68E+06	3.83E+06	110	2.51E+00	1.17E+07	5.11E+06
114	1.00E+01	9.96E+06	4.15E+06	110	3.98E+00	1.32E+07	5.56E+06
114	1.58E+01	1.14E+07	4.27E+06	110	6.31E+00	1.49E+07	5.82E+06
114	2.51E+01	1.29E+07	4.32E+06	110	1.00E+01	1.70E+07	5.94E+06
114	3.98E+01	1.50E+07	3.79E+06	110	1.58E+01	1.91E+07	5.81E+06
114	6.31E+01	1.77E+07	2.19E+06	110	2.51E+01	2.08E+07	4.86E+06
114	1.00E+02	1.92E+07	0.00E+00	110	3.98E+01	2.32E+07	3.17E+06
112	1.00E-01	3.78E+06	1.50E+06	110	6.31E+01	2.53E+07	0.00E+00
112	1.58E-01	4.21E+06	1.78E+06	110	1.00E+02	2.55E+07	0.00E+00
112	2.51E-01	4.75E+06	2.10E+06				
112	3.98E-01	5.36E+06	2.41E+06				
112	6.31E-01	6.07E+06	2.82E+06				
112	1.00E+00	6.88E+06	3.22E+06				
112	1.58E+00	7.82E+06	3.65E+06				
112	2.51E+00	9.03E+06	4.08E+06				
112	3.98E+00	1.02E+07	4.45E+06				
112	6.31E+00	1.16E+07	4.84E+06				
112	1.00E+01	1.32E+07	5.02E+06				
112	1.58E+01	1.50E+07	5.07E+06				
112	2.51E+01	1.70E+07	4.78E+06				
112	3.98E+01	1.90E+07	3.65E+06				
112	6.31E+01	2.17E+07	1.42E+06				
112	1.00E+02	2.35E+07	0.00E+00				
110	1.00E-01	4.95E+06	1.94E+06				
110	1.58E-01	5.52E+06	2.32E+06				
110	2.51E-01	6.24E+06	2.74E+06				
110	3.98E-01	7.00E+06	3.19E+06				

19. Data of frequency, storage modulus and loss modulus of MDPE (M3204RU)

Parallel plates 25 mm, gap = 0.582 mm, % strain = 5, 5 point per decade at 190 °C.

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
230	1.00E-01	4.10E+04	3.89E+03	220	1.58E+01	7.58E+04	3.48E+04
230	1.58E-01	3.22E+04	2.13E+03	220	2.51E+01	8.59E+04	4.86E+04
230	2.51E-01	3.83E+04	1.79E+02	220	3.98E+01	1.03E+05	6.77E+04
230	3.98E-01	3.79E+04	0.00E+00	220	6.31E+01	1.25E+05	9.14E+04
230	6.31E-01	3.74E+04	0.00E+00	220	1.00E+02	1.56E+05	1.23E+05
230	1.00E+00	3.87E+04	1.68E+03	210	1.00E-01	4.94E+04	0.00E+00
230	1.58E+00	3.72E+04	3.50E+03	210	1.58E-01	5.00E+04	1.95E+02
230	2.51E+00	3.87E+04	6.69E+03	210	2.51E-01	5.11E+04	3.13E+02
230	3.98E+00	4.06E+04	9.18E+03	210	3.98E-01	5.21E+04	6.04E+02
230	6.31E+00	4.29E+04	1.33E+04	210	6.31E-01	5.31E+04	1.68E+03
230	1.00E+01	4.66E+04	2.01E+04	210	1.00E+00	5.42E+04	2.95E+03
230	1.58E+01	5.11E+04	2.81E+04	210	1.58E+00	5.55E+04	4.85E+03
230	2.51E+01	5.87E+04	3.91E+04	210	2.51E+00	5.74E+04	7.53E+03
230	3.98E+01	6.96E+04	5.36E+04	210	3.98E+00	6.03E+04	1.16E+04
230	6.31E+01	8.60E+04	7.27E+04	210	6.31E+00	6.44E+04	1.72E+04
230	1.00E+02	1.10E+05	1.00E+05	210	1.00E+01	7.07E+04	2.49E+04
220	1.00E-01	4.89E+04	0.00E+00	210	1.58E+01	8.00E+04	3.56E+04
220	1.58E-01	5.02E+04	6.24E+02	210	2.51E+01	9.37E+04	5.04E+04
220	2.51E-01	5.05E+04	0.00E+00	210	3.98E+01	1.13E+05	7.01E+04
220	3.98E-01	5.12E+04	1.99E+02	210	6.31E+01	1.39E+05	9.58E+04
220	6.31E-01	5.16E+04	5.35E+02	210	1.00E+02	1.75E+05	1.30E+05
220	1.00E+00	5.27E+04	2.61E+03	200	1.00E-01	6.58E+04	0.00E+00
220	1.58E+00	5.41E+04	5.48E+03	200	1.58E-01	6.81E+04	0.00E+00
220	2.51E+00	5.65E+04	7.79E+03	200	2.51E-01	7.01E+04	0.00E+00
220	3.98E+00	5.93E+04	1.15E+04	200	3.98E-01	7.18E+04	0.00E+00
220	6.31E+00	6.25E+04	1.71E+04	200	6.31E-01	7.34E+04	1.19E+03
220	1.00E+01	6.80E+04	2.51E+04	200	1.00E+00	7.51E+04	3.02E+03

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
200	1.58E+00	7.74E+04	5.84E+03	180	6.31E-01	9.45E+04	8.60E+03
200	2.51E+00	8.02E+04	9.98E+03	180	1.00E+00	9.64E+04	1.18E+04
200	3.98E+00	8.44E+04	1.58E+04	180	1.58E+00	9.90E+04	1.62E+04
200	6.31E+00	9.01E+04	2.40E+04	180	2.51E+00	1.02E+05	2.25E+04
200	1.00E+01	9.86E+04	3.54E+04	180	3.98E+00	1.07E+05	3.11E+04
200	1.58E+01	1.11E+05	5.11E+04	180	6.31E+00	1.14E+05	4.31E+04
200	2.51E+01	1.27E+05	7.18E+04	180	1.00E+01	1.24E+05	5.94E+04
200	3.98E+01	1.51E+05	9.88E+04	180	1.58E+01	1.38E+05	8.09E+04
200	6.31E+01	1.84E+05	1.33E+05	180	2.51E+01	1.58E+05	1.09E+05
200	1.00E+02	2.30E+05	1.75E+05	180	3.98E+01	1.87E+05	1.46E+05
190	1.00E-01	8.28E+04	3.87E+03	180	6.31E+01	2.28E+05	1.92E+05
190	1.58E-01	8.47E+04	4.31E+03	180	1.00E+02	2.85E+05	2.48E+05
190	2.51E-01	8.64E+04	5.06E+03	170	1.00E-01	9.26E+04	3.95E+03
190	3.98E-01	8.80E+04	6.31E+03	170	1.58E-01	9.41E+04	4.56E+03
190	6.31E-01	8.94E+04	8.00E+03	170	2.51E-01	9.54E+04	5.65E+03
190	1.00E+00	9.12E+04	1.09E+04	170	3.98E-01	9.70E+04	7.38E+03
190	1.58E+00	9.34E+04	1.47E+04	170	6.31E-01	9.85E+04	9.89E+03
190	2.51E+00	9.64E+04	2.03E+04	170	1.00E+00	1.01E+05	1.34E+04
190	3.98E+00	1.01E+05	2.78E+04	170	1.58E+00	1.03E+05	1.86E+04
190	6.31E+00	1.06E+05	3.85E+04	170	2.51E+00	1.07E+05	2.58E+04
190	1.00E+01	1.15E+05	5.34E+04	170	3.98E+00	1.13E+05	3.58E+04
190	1.58E+01	1.27E+05	7.27E+04	170	6.31E+00	1.21E+05	4.95E+04
190	2.51E+01	1.45E+05	9.84E+04	170	1.00E+01	1.32E+05	6.77E+04
190	3.98E+01	1.71E+05	1.32E+05	170	1.58E+01	1.49E+05	9.20E+04
190	6.31E+01	2.07E+05	1.74E+05	170	2.51E+01	1.73E+05	1.23E+05
190	1.00E+02	2.59E+05	2.26E+05	170	3.98E+01	2.06E+05	1.63E+05
180	1.00E-01	8.84E+04	3.79E+03	170	6.31E+01	2.52E+05	2.13E+05
180	1.58E-01	9.01E+04	4.35E+03	170	1.00E+02	3.17E+05	2.74E+05
180	2.51E-01	9.15E+04	5.13E+03	160	1.00E-01	9.50E+04	4.17E+03
180	3.98E-01	9.30E+04	6.55E+03	160	1.58E-01	9.64E+04	5.18E+03

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
160	2.51E-01	9.79E+04	6.52E+03	140	1.00E-01	5.15E+04	1.95E+03
160	3.98E-01	9.94E+04	8.65E+03	140	1.58E-01	5.21E+04	5.24E+03
160	6.31E-01	1.01E+05	1.17E+04	140	2.51E-01	5.47E+04	4.31E+03
160	1.00E+00	1.04E+05	1.60E+04	140	3.98E-01	5.24E+04	6.78E+03
160	1.58E+00	1.07E+05	2.19E+04	140	6.31E-01	5.50E+04	8.42E+03
160	2.51E+00	1.12E+05	3.03E+04	140	1.00E+00	5.73E+04	1.14E+04
160	3.98E+00	1.18E+05	4.17E+04	140	1.58E+00	5.92E+04	1.52E+04
160	6.31E+00	1.28E+05	5.73E+04	140	2.51E+00	6.26E+04	2.08E+04
160	1.00E+01	1.41E+05	7.78E+04	140	3.98E+00	6.75E+04	2.82E+04
160	1.58E+01	1.61E+05	1.05E+05	140	6.31E+00	7.46E+04	3.81E+04
160	2.51E+01	1.88E+05	1.40E+05	140	1.00E+01	8.47E+04	5.06E+04
160	3.98E+01	2.26E+05	1.84E+05	140	1.58E+01	9.88E+04	6.62E+04
160	6.31E+01	2.79E+05	2.38E+05	140	2.51E+01	1.18E+05	8.51E+04
160	1.00E+02	3.52E+05	3.04E+05	140	3.98E+01	1.45E+05	1.07E+05
150	1.00E-01	9.62E+04	4.69E+03	140	6.31E+01	1.79E+05	1.31E+05
150	1.58E-01	9.77E+04	5.92E+03	140	1.00E+02	2.24E+05	1.55E+05
150	2.51E-01	9.92E+04	7.62E+03	130	1.00E-01	4.22E+04	2.41E+03
150	3.98E-01	1.01E+05	1.02E+04	130	1.58E-01	4.26E+04	3.12E+03
150	6.31E-01	1.03E+05	1.38E+04	130	2.51E-01	4.37E+04	4.55E+03
150	1.00E+00	1.06E+05	1.88E+04	130	3.98E-01	4.48E+04	5.75E+03
150	1.58E+00	1.10E+05	2.58E+04	130	6.31E-01	4.62E+04	8.10E+03
150	2.51E+00	1.15E+05	3.54E+04	130	1.00E+00	4.78E+04	1.08E+04
150	3.98E+00	1.23E+05	4.86E+04	130	1.58E+00	5.05E+04	1.51E+04
150	6.31E+00	1.35E+05	6.63E+04	130	2.51E+00	5.40E+04	2.06E+04
150	1.00E+01	1.51E+05	8.99E+04	130	3.98E+00	5.90E+04	2.76E+04
150	1.58E+01	1.73E+05	1.20E+05	130	6.31E+00	6.63E+04	3.68E+04
150	2.51E+01	2.05E+05	1.59E+05	130	1.00E+01	7.64E+04	4.84E+04
150	3.98E+01	2.50E+05	2.08E+05	130	1.58E+01	9.03E+04	6.26E+04
150	6.31E+01	3.10E+05	2.66E+05	130	2.51E+01	1.09E+05	7.96E+04
150	1.00E+02	3.94E+05	3.36E+05	130	3.98E+01	1.35E+05	9.86E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
130	6.31E+01	1.68E+05	1.18E+05	126	2.51E+01	1.14E+05	8.17E+04
130	1.00E+02	2.10E+05	1.36E+05	126	3.98E+01	1.41E+05	1.01E+05
128	1.00E-01	4.14E+04	2.78E+03	126	6.31E+01	1.76E+05	1.19E+05
128	1.58E-01	4.21E+04	3.41E+03	126	1.00E+02	2.18E+05	1.36E+05
128	2.51E-01	4.35E+04	4.93E+03	124	1.00E-01	4.33E+04	2.72E+03
128	3.98E-01	4.48E+04	5.98E+03	124	1.58E-01	4.36E+04	3.56E+03
128	6.31E-01	4.60E+04	8.30E+03	124	2.51E-01	4.48E+04	5.36E+03
128	1.00E+00	4.79E+04	1.13E+04	124	3.98E-01	4.55E+04	6.43E+03
128	1.58E+00	5.08E+04	1.50E+04	124	6.31E-01	4.78E+04	8.93E+03
128	2.51E+00	5.46E+04	2.03E+04	124	1.00E+00	4.92E+04	1.21E+04
128	3.98E+00	6.00E+04	2.80E+04	124	1.58E+00	5.21E+04	1.61E+04
128	6.31E+00	6.73E+04	3.71E+04	124	2.51E+00	5.61E+04	2.22E+04
128	1.00E+01	7.77E+04	4.88E+04	124	3.98E+00	6.16E+04	2.93E+04
128	1.58E+01	9.23E+04	6.29E+04	124	6.31E+00	6.95E+04	3.91E+04
128	2.51E+01	1.12E+05	7.98E+04	124	1.00E+01	8.05E+04	5.11E+04
128	3.98E+01	1.38E+05	9.79E+04	124	1.58E+01	9.50E+04	6.58E+04
128	6.31E+01	1.72E+05	1.17E+05	124	2.51E+01	1.16E+05	8.29E+04
128	1.00E+02	2.14E+05	1.34E+05	124	3.98E+01	1.44E+05	1.02E+05
126	1.00E-01	4.26E+04	3.04E+03	124	6.31E+01	1.78E+05	1.20E+05
126	1.58E-01	4.41E+04	3.52E+03	124	1.00E+02	2.21E+05	1.37E+05
126	2.51E-01	4.44E+04	4.62E+03	122	1.00E-01	4.28E+04	2.81E+03
126	3.98E-01	4.57E+04	6.59E+03	122	1.58E-01	4.39E+04	3.92E+03
126	6.31E-01	4.70E+04	8.78E+03	122	2.51E-01	4.43E+04	5.00E+03
126	1.00E+00	4.93E+04	1.18E+04	122	3.98E-01	4.59E+04	7.14E+03
126	1.58E+00	5.22E+04	1.61E+04	122	6.31E-01	4.74E+04	9.49E+03
126	2.51E+00	5.58E+04	2.14E+04	122	1.00E+00	4.98E+04	1.25E+04
126	3.98E+00	6.12E+04	2.91E+04	122	1.58E+00	5.20E+04	1.70E+04
126	6.31E+00	6.84E+04	3.85E+04	122	2.51E+00	5.69E+04	2.34E+04
126	1.00E+01	7.96E+04	5.03E+04	122	3.98E+00	6.25E+04	3.15E+04
126	1.58E+01	9.39E+04	6.44E+04	122	6.31E+00	7.09E+04	4.16E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
122	1.00E+01	8.25E+04	5.44E+04	118	3.98E+00	2.73E+06	3.46E+04
122	1.58E+01	9.86E+04	6.99E+04	118	6.31E+00	2.84E+06	5.47E+03
122	2.51E+01	1.22E+05	8.88E+04	118	1.00E+01	2.91E+06	0.00E+00
122	3.98E+01	1.51E+05	1.08E+05	118	1.58E+01	2.93E+06	0.00E+00
122	6.31E+01	1.88E+05	1.28E+05	118	2.51E+01	2.93E+06	0.00E+00
122	1.00E+02	2.35E+05	1.45E+05	118	3.98E+01	2.92E+06	0.00E+00
120	1.00E-01	1.16E+05	4.30E+04	118	6.31E+01	2.94E+06	0.00E+00
120	1.58E-01	2.69E+05	1.38E+05	118	1.00E+02	2.91E+06	0.00E+00
120	2.51E-01	4.80E+05	2.51E+05	116	1.00E-01	1.80E+06	9.74E+04
120	3.98E-01	7.00E+05	3.51E+05	116	1.58E-01	1.93E+06	1.06E+05
120	6.31E-01	9.46E+05	4.59E+05	116	2.51E-01	2.02E+06	1.08E+05
120	1.00E+00	1.19E+06	5.39E+05	116	3.98E-01	2.11E+06	6.35E+04
120	1.58E+00	1.45E+06	6.11E+05	116	6.31E-01	2.17E+06	4.03E+04
120	2.51E+00	1.70E+06	6.37E+05	116	1.00E+00	2.29E+06	2.33E+04
120	3.98E+00	1.96E+06	6.73E+05	116	1.58E+00	2.37E+06	0.00E+00
120	6.31E+00	2.20E+06	6.68E+05	116	2.51E+00	2.43E+06	0.00E+00
120	1.00E+01	2.43E+06	6.10E+05	116	3.98E+00	2.50E+06	0.00E+00
120	1.58E+01	2.62E+06	5.22E+05	116	6.31E+00	2.55E+06	0.00E+00
120	2.51E+01	2.77E+06	4.31E+05	116	1.00E+01	2.58E+06	0.00E+00
120	3.98E+01	2.92E+06	3.19E+05	116	1.58E+01	2.61E+06	0.00E+00
120	6.31E+01	3.07E+06	1.99E+05	116	2.51E+01	2.62E+06	0.00E+00
120	1.00E+02	3.16E+06	5.44E+04	116	3.98E+01	2.63E+06	0.00E+00
118	1.00E-01	1.85E+06	1.85E+05	116	6.31E+01	2.61E+06	0.00E+00
118	1.58E-01	1.98E+06	1.75E+05	116	1.00E+02	2.55E+06	0.00E+00
118	2.51E-01	2.09E+06	1.63E+05	114	1.00E-01	1.78E+06	8.46E+04
118	3.98E-01	2.19E+06	1.58E+05	114	1.58E-01	1.87E+06	8.24E+04
118	6.31E-01	2.32E+06	1.46E+05	114	2.51E-01	1.96E+06	7.94E+04
118	1.00E+00	2.44E+06	1.10E+05	114	3.98E-01	2.05E+06	4.26E+04
118	1.58E+00	2.54E+06	1.07E+05	114	6.31E-01	2.13E+06	3.47E+04
118	2.51E+00	2.63E+06	7.06E+04	114	1.00E+00	2.21E+06	3.52E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
130	6.31E+01	1.68E+05	1.18E+05	126	2.51E+01	1.14E+05	8.17E+04
130	1.00E+02	2.10E+05	1.36E+05	126	3.98E+01	1.41E+05	1.01E+05
128	1.00E-01	4.14E+04	2.78E+03	126	6.31E+01	1.76E+05	1.19E+05
128	1.58E-01	4.21E+04	3.41E+03	126	1.00E+02	2.18E+05	1.36E+05
128	2.51E-01	4.35E+04	4.93E+03	124	1.00E-01	4.33E+04	2.72E+03
128	3.98E-01	4.48E+04	5.98E+03	124	1.58E-01	4.36E+04	3.56E+03
128	6.31E-01	4.60E+04	8.30E+03	124	2.51E-01	4.48E+04	5.36E+03
128	1.00E+00	4.79E+04	1.13E+04	124	3.98E-01	4.55E+04	6.43E+03
128	1.58E+00	5.08E+04	1.50E+04	124	6.31E-01	4.78E+04	8.93E+03
128	2.51E+00	5.46E+04	2.03E+04	124	1.00E+00	4.92E+04	1.21E+04
128	3.98E+00	6.00E+04	2.80E+04	124	1.58E+00	5.21E+04	1.61E+04
128	6.31E+00	6.73E+04	3.71E+04	124	2.51E+00	5.61E+04	2.22E+04
128	1.00E+01	7.77E+04	4.88E+04	124	3.98E+00	6.16E+04	2.93E+04
128	1.58E+01	9.23E+04	6.29E+04	124	6.31E+00	6.95E+04	3.91E+04
128	2.51E+01	1.12E+05	7.98E+04	124	1.00E+01	8.05E+04	5.11E+04
128	3.98E+01	1.38E+05	9.79E+04	124	1.58E+01	9.50E+04	6.58E+04
128	6.31E+01	1.72E+05	1.17E+05	124	2.51E+01	1.16E+05	8.29E+04
128	1.00E+02	2.14E+05	1.34E+05	124	3.98E+01	1.44E+05	1.02E+05
126	1.00E-01	4.26E+04	3.04E+03	124	6.31E+01	1.78E+05	1.20E+05
126	1.58E-01	4.41E+04	3.52E+03	124	1.00E+02	2.21E+05	1.37E+05
126	2.51E-01	4.44E+04	4.62E+03	122	1.00E-01	4.28E+04	2.81E+03
126	3.98E-01	4.57E+04	6.59E+03	122	1.58E-01	4.39E+04	3.92E+03
126	6.31E-01	4.70E+04	8.78E+03	122	2.51E-01	4.43E+04	5.00E+03
126	1.00E+00	4.93E+04	1.18E+04	122	3.98E-01	4.59E+04	7.14E+03
126	1.58E+00	5.22E+04	1.61E+04	122	6.31E-01	4.74E+04	9.49E+03
126	2.51E+00	5.58E+04	2.14E+04	122	1.00E+00	4.98E+04	1.25E+04
126	3.98E+00	6.12E+04	2.91E+04	122	1.58E+00	5.20E+04	1.70E+04
126	6.31E+00	6.84E+04	3.85E+04	122	2.51E+00	5.69E+04	2.34E+04
126	1.00E+01	7.96E+04	5.03E+04	122	3.98E+00	6.25E+04	3.15E+04
126	1.58E+01	9.39E+04	6.44E+04	122	6.31E+00	7.09E+04	4.16E+04

20. Data of frequency, storage modulus and loss modulus of HDPE (N3260)

Parallel plates 25 mm, gap = 0.607 mm, % strain = 4, 5 point per decade at 190 °C.

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
230	1.00E-01	3.69E+03	8.83E+02	220	1.58E+01	3.05E+04	4.19E+04
230	1.58E-01	4.09E+03	1.22E+03	220	2.51E+01	4.32E+04	5.79E+04
230	2.51E-01	4.29E+03	1.75E+03	220	3.98E+01	6.37E+04	7.97E+04
230	3.98E-01	4.71E+03	2.40E+03	220	6.31E+01	9.25E+04	1.09E+05
230	6.31E-01	5.15E+03	3.35E+03	220	1.00E+02	1.32E+05	1.47E+05
230	1.00E+00	5.75E+03	4.83E+03	210	1.00E-01	7.78E+03	1.74E+03
230	1.58E+00	6.70E+03	6.87E+03	210	1.58E-01	8.10E+03	2.67E+03
230	2.51E+00	7.93E+03	9.72E+03	210	2.51E-01	8.68E+03	3.63E+03
230	3.98E+00	9.81E+03	1.38E+04	210	3.98E-01	9.62E+03	4.67E+03
230	6.31E+00	1.26E+04	1.95E+04	210	6.31E-01	1.07E+04	6.08E+03
230	1.00E+01	1.69E+04	2.76E+04	210	1.00E+00	1.23E+04	7.87E+03
230	1.58E+01	2.36E+04	3.88E+04	210	1.58E+00	1.42E+04	1.04E+04
230	2.51E+01	3.44E+04	5.45E+04	210	2.51E+00	1.67E+04	1.38E+04
230	3.98E+01	5.17E+04	7.59E+04	210	3.98E+00	2.00E+04	1.86E+04
230	6.31E+01	7.73E+04	1.05E+05	210	6.31E+00	2.48E+04	2.50E+04
230	1.00E+02	1.14E+05	1.44E+05	210	1.00E+01	3.18E+04	3.40E+04
220	1.00E-01	5.36E+03	1.29E+03	210	1.58E+01	4.23E+04	4.60E+04
220	1.58E-01	5.74E+03	1.77E+03	210	2.51E+01	5.89E+04	6.26E+04
220	2.51E-01	6.17E+03	2.44E+03	210	3.98E+01	8.19E+04	8.50E+04
220	3.98E-01	6.76E+03	3.30E+03	210	6.31E+01	1.13E+05	1.15E+05
220	6.31E-01	7.42E+03	4.58E+03	210	1.00E+02	1.54E+05	1.52E+05
220	1.00E+00	8.45E+03	6.16E+03	200	1.00E-01	1.01E+04	3.08E+03
220	1.58E+00	9.75E+03	8.44E+03	200	1.58E-01	1.14E+04	3.55E+03
220	2.51E+00	1.15E+04	1.16E+04	200	2.51E-01	1.21E+04	4.94E+03
220	3.98E+00	1.41E+04	1.60E+04	200	3.98E-01	1.34E+04	6.22E+03
220	6.31E+00	1.76E+04	2.20E+04	200	6.31E-01	1.51E+04	7.90E+03
220	1.00E+01	2.27E+04	3.04E+04	200	1.00E+00	1.70E+04	1.01E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
200	1.58E+00	1.95E+04	1.31E+04	180	6.31E-01	2.70E+04	1.41E+04
200	2.51E+00	2.31E+04	1.71E+04	180	1.00E+00	3.05E+04	1.77E+04
200	3.98E+00	2.80E+04	2.25E+04	180	1.58E+00	3.50E+04	2.25E+04
200	6.31E+00	3.48E+04	2.99E+04	180	2.51E+00	4.05E+04	2.90E+04
200	1.00E+01	4.54E+04	4.04E+04	180	3.98E+00	4.76E+04	3.76E+04
200	1.58E+01	6.02E+04	5.50E+04	180	6.31E+00	5.69E+04	4.93E+04
200	2.51E+01	7.99E+04	7.45E+04	180	1.00E+01	6.90E+04	6.43E+04
200	3.98E+01	1.06E+05	1.01E+05	180	1.58E+01	8.51E+04	8.43E+04
200	6.31E+01	1.41E+05	1.34E+05	180	2.51E+01	1.07E+05	1.11E+05
200	1.00E+02	1.88E+05	1.75E+05	180	3.98E+01	1.36E+05	1.43E+05
190	1.00E-01	1.41E+04	4.33E+03	180	6.31E+01	1.76E+05	1.86E+05
190	1.58E-01	1.52E+04	5.47E+03	180	1.00E+02	2.31E+05	2.39E+05
190	2.51E-01	1.66E+04	6.70E+03	170	1.00E-01	2.00E+04	7.41E+03
190	3.98E-01	1.84E+04	8.31E+03	170	1.58E-01	2.21E+04	8.73E+03
190	6.31E-01	2.06E+04	1.04E+04	170	2.51E-01	2.44E+04	1.05E+04
190	1.00E+00	2.34E+04	1.33E+04	170	3.98E-01	2.73E+04	1.27E+04
190	1.58E+00	2.71E+04	1.69E+04	170	6.31E-01	3.05E+04	1.56E+04
190	2.51E+00	3.19E+04	2.20E+04	170	1.00E+00	3.44E+04	1.95E+04
190	3.98E+00	3.86E+04	2.89E+04	170	1.58E+00	3.92E+04	2.47E+04
190	6.31E+00	4.78E+04	3.87E+04	170	2.51E+00	4.52E+04	3.17E+04
190	1.00E+01	6.01E+04	5.22E+04	170	3.98E+00	5.29E+04	4.09E+04
190	1.58E+01	7.60E+04	7.04E+04	170	6.31E+00	6.29E+04	5.33E+04
190	2.51E+01	9.71E+04	9.43E+04	170	1.00E+01	7.61E+04	6.95E+04
190	3.98E+01	1.25E+05	1.25E+05	170	1.58E+01	9.37E+04	9.10E+04
190	6.31E+01	1.63E+05	1.64E+05	170	2.51E+01	1.17E+05	1.19E+05
190	1.00E+02	2.15E+05	2.12E+05	170	3.98E+01	1.49E+05	1.54E+05
180	1.00E-01	1.76E+04	6.21E+03	170	6.31E+01	1.91E+05	1.98E+05
180	1.58E-01	1.93E+04	7.42E+03	170	1.00E+02	2.50E+05	2.54E+05
180	2.51E-01	2.16E+04	9.15E+03	160	1.00E-01	2.23E+04	8.26E+03
180	3.98E-01	2.41E+04	1.13E+04	160	1.58E-01	2.46E+04	9.71E+03

Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
160	2.51E-01	2.72E+04	1.17E+04	140	1.00E-01	2.67E+04	1.02E+04
160	3.98E-01	3.02E+04	1.42E+04	140	1.58E-01	2.96E+04	1.21E+04
160	6.31E-01	3.39E+04	1.75E+04	140	2.51E-01	3.28E+04	1.46E+04
160	1.00E+00	3.82E+04	2.19E+04	140	3.98E-01	3.65E+04	1.78E+04
160	1.58E+00	4.36E+04	2.77E+04	140	6.31E-01	4.10E+04	2.21E+04
160	2.51E+00	5.05E+04	3.55E+04	140	1.00E+00	4.66E+04	2.77E+04
160	3.98E+00	5.92E+04	4.60E+04	140	1.58E+00	5.34E+04	3.53E+04
160	6.31E+00	7.03E+04	5.95E+04	140	2.51E+00	6.21E+04	4.53E+04
160	1.00E+01	8.52E+04	7.76E+04	140	3.98E+00	7.32E+04	5.84E+04
160	1.58E+01	1.05E+05	1.01E+05	140	6.31E+00	8.79E+04	7.57E+04
160	2.51E+01	1.31E+05	1.31E+05	140	1.00E+01	1.07E+05	9.84E+04
160	3.98E+01	1.67E+05	1.69E+05	140	1.58E+01	1.33E+05	1.27E+05
160	6.31E+01	2.15E+05	2.17E+05	140	2.51E+01	1.67E+05	1.64E+05
160	1.00E+02	2.80E+05	2.77E+05	140	3.98E+01	2.13E+05	2.09E+05
150	1.00E-01	2.45E+04	9.12E+03	140	6.31E+01	2.74E+05	2.65E+05
150	1.58E-01	2.70E+04	1.08E+04	140	1.00E+02	3.56E+05	3.32E+05
150	2.51E-01	2.99E+04	1.30E+04	130	1.00E-01	2.93E+04	1.13E+04
150	3.98E-01	3.33E+04	1.58E+04	130	1.58E-01	3.23E+04	1.35E+04
150	6.31E-01	3.73E+04	1.96E+04	130	2.51E-01	3.59E+04	1.64E+04
150	1.00E+00	4.22E+04	2.45E+04	130	3.98E-01	4.01E+04	2.01E+04
150	1.58E+00	4.83E+04	3.11E+04	130	6.31E-01	4.52E+04	2.50E+04
150	2.51E+00	5.60E+04	4.00E+04	130	1.00E+00	5.14E+04	3.15E+04
150	3.98E+00	6.57E+04	5.15E+04	130	1.58E+00	5.93E+04	4.01E+04
150	6.31E+00	7.86E+04	6.68E+04	130	2.51E+00	6.92E+04	5.15E+04
150	1.00E+01	9.55E+04	8.71E+04	130	3.98E+00	8.20E+04	6.64E+04
150	1.58E+01	1.18E+05	1.13E+05	130	6.31E+00	9.88E+04	8.61E+04
150	2.51E+01	1.48E+05	1.46E+05	130	1.00E+01	1.21E+05	1.11E+05
150	3.98E+01	1.88E+05	1.88E+05	130	1.58E+01	1.51E+05	1.44E+05
150	6.31E+01	2.42E+05	2.40E+05	130	2.51E+01	1.90E+05	1.84E+05
150	1.00E+02	3.15E+05	3.02E+05	130	3.98E+01	2.43E+05	2.34E+05

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
130	6.31E+01	3.12E+05	2.94E+05	126	2.51E+01	1.06E+05	9.43E+04
130	1.00E+02	4.05E+05	3.65E+05	126	3.98E+01	1.36E+05	1.17E+05
128	1.00E-01	3.03E+04	1.16E+04	126	6.31E+01	1.74E+05	1.43E+05
128	1.58E-01	3.32E+04	1.39E+04	126	1.00E+02	2.20E+05	1.70E+05
128	2.51E-01	3.69E+04	1.68E+04	124	1.00E-01	1.99E+04	8.47E+03
128	3.98E-01	4.12E+04	2.06E+04	124	1.58E-01	3.67E+04	2.21E+04
128	6.31E-01	4.64E+04	2.55E+04	124	2.51E-01	6.86E+04	4.37E+04
128	1.00E+00	5.27E+04	3.21E+04	124	3.98E-01	1.15E+05	7.06E+04
128	1.58E+00	6.07E+04	4.10E+04	124	6.31E-01	1.64E+05	9.44E+04
128	2.51E+00	7.09E+04	5.25E+04	124	1.00E+00	2.16E+05	1.23E+05
128	3.98E+00	8.41E+04	6.78E+04	124	1.58E+00	2.68E+05	1.59E+05
128	6.31E+00	1.01E+05	8.80E+04	124	2.51E+00	3.40E+05	2.04E+05
128	1.00E+01	1.24E+05	1.14E+05	124	3.98E+00	4.22E+05	2.56E+05
128	1.58E+01	1.52E+05	1.44E+05	124	6.31E+00	5.25E+05	3.14E+05
128	2.51E+01	1.86E+05	1.79E+05	124	1.00E+01	6.62E+05	3.80E+05
128	3.98E+01	2.32E+05	2.20E+05	124	1.58E+01	8.34E+05	4.47E+05
128	6.31E+01	2.94E+05	2.72E+05	124	2.51E+01	1.05E+06	5.11E+05
128	1.00E+02	3.74E+05	3.32E+05	124	3.98E+01	1.30E+06	5.58E+05
126	1.00E-01	1.51E+04	4.34E+03	124	6.31E+01	1.59E+06	5.74E+05
126	1.58E-01	1.84E+04	6.68E+03	124	1.00E+02	1.90E+06	5.36E+05
126	2.51E-01	2.09E+04	8.96E+03	122	1.00E-01	3.54E+06	2.66E+05
126	3.98E-01	2.32E+04	1.05E+04	122	1.58E-01	3.82E+06	3.51E+05
126	6.31E-01	2.54E+04	1.29E+04	122	2.51E-01	4.05E+06	3.45E+05
126	1.00E+00	2.88E+04	1.68E+04	122	3.98E-01	4.23E+06	3.22E+05
126	1.58E+00	3.28E+04	2.14E+04	122	6.31E-01	4.35E+06	2.83E+05
126	2.51E+00	3.84E+04	2.72E+04	122	1.00E+00	4.49E+06	2.44E+05
126	3.98E+00	4.53E+04	3.51E+04	122	1.58E+00	4.60E+06	2.10E+05
126	6.31E+00	5.47E+04	4.53E+04	122	2.51E+00	4.72E+06	1.82E+05
126	1.00E+01	6.73E+04	5.82E+04	122	3.98E+00	4.79E+06	1.72E+05
126	1.58E+01	8.41E+04	7.43E+04	122	6.31E+00	4.75E+06	1.64E+05

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
122	1.00E+01	8.25E+04	5.44E+04	118	3.98E+00	2.73E+06	3.46E+04
122	1.58E+01	9.86E+04	6.99E+04	118	6.31E+00	2.84E+06	5.47E+03
122	2.51E+01	1.22E+05	8.88E+04	118	1.00E+01	2.91E+06	0.00E+00
122	3.98E+01	1.51E+05	1.08E+05	118	1.58E+01	2.93E+06	0.00E+00
122	6.31E+01	1.88E+05	1.28E+05	118	2.51E+01	2.93E+06	0.00E+00
122	1.00E+02	2.35E+05	1.45E+05	118	3.98E+01	2.92E+06	0.00E+00
120	1.00E-01	1.16E+05	4.30E+04	118	6.31E+01	2.94E+06	0.00E+00
120	1.58E-01	2.69E+05	1.38E+05	118	1.00E+02	2.91E+06	0.00E+00
120	2.51E-01	4.80E+05	2.51E+05	116	1.00E-01	1.80E+06	9.74E+04
120	3.98E-01	7.00E+05	3.51E+05	116	1.58E-01	1.93E+06	1.06E+05
120	6.31E-01	9.46E+05	4.59E+05	116	2.51E-01	2.02E+06	1.08E+05
120	1.00E+00	1.19E+06	5.39E+05	116	3.98E-01	2.11E+06	6.35E+04
120	1.58E+00	1.45E+06	6.11E+05	116	6.31E-01	2.17E+06	4.03E+04
120	2.51E+00	1.70E+06	6.37E+05	116	1.00E+00	2.29E+06	2.33E+04
120	3.98E+00	1.96E+06	6.73E+05	116	1.58E+00	2.37E+06	0.00E+00
120	6.31E+00	2.20E+06	6.68E+05	116	2.51E+00	2.43E+06	0.00E+00
120	1.00E+01	2.43E+06	6.10E+05	116	3.98E+00	2.50E+06	0.00E+00
120	1.58E+01	2.62E+06	5.22E+05	116	6.31E+00	2.55E+06	0.00E+00
120	2.51E+01	2.77E+06	4.31E+05	116	1.00E+01	2.58E+06	0.00E+00
120	3.98E+01	2.92E+06	3.19E+05	116	1.58E+01	2.61E+06	0.00E+00
120	6.31E+01	3.07E+06	1.99E+05	116	2.51E+01	2.62E+06	0.00E+00
120	1.00E+02	3.16E+06	5.44E+04	116	3.98E+01	2.63E+06	0.00E+00
118	1.00E-01	1.85E+06	1.85E+05	116	6.31E+01	2.61E+06	0.00E+00
118	1.58E-01	1.98E+06	1.75E+05	116	1.00E+02	2.55E+06	0.00E+00
118	2.51E-01	2.09E+06	1.63E+05	114	1.00E-01	1.78E+06	8.46E+04
118	3.98E-01	2.19E+06	1.58E+05	114	1.58E-01	1.87E+06	8.24E+04
118	6.31E-01	2.32E+06	1.46E+05	114	2.51E-01	1.96E+06	7.94E+04
118	1.00E+00	2.44E+06	1.10E+05	114	3.98E-01	2.05E+06	4.26E+04
118	1.58E+00	2.54E+06	1.07E+05	114	6.31E-01	2.13E+06	3.47E+04
118	2.51E+00	2.63E+06	7.06E+04	114	1.00E+00	2.21E+06	3.52E+04

21. Data of frequency, storage modulus and loss modulus of HDPE (H5690S)

Parallel plates 25 mm, gap = 0.600 mm, % strain = 4, 5 point per decade at 190 °C.

Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
210	1.00E-01	2.81E+03	1.03E+04	200	1.58E+01	4.65E+05	6.28E+05
210	1.58E-01	5.15E+03	1.55E+04	200	2.51E+01	6.56E+05	8.10E+05
210	2.51E-01	7.85E+03	2.21E+04	200	3.98E+01	9.14E+05	1.02E+06
210	3.98E-01	1.19E+04	3.15E+04	200	6.31E+01	1.26E+06	1.26E+06
210	6.31E-01	1.90E+04	4.59E+04	200	1.00E+02	1.74E+06	1.52E+06
210	1.00E+00	2.92E+04	6.60E+04	190	1.00E-01	9.66E+03	2.03E+04
210	1.58E+00	4.58E+04	9.52E+04	190	1.58E-01	1.42E+04	2.95E+04
210	2.51E+00	7.33E+04	1.38E+05	190	2.51E-01	2.04E+04	4.19E+04
210	3.98E+00	1.16E+05	1.98E+05	190	3.98E-01	2.86E+04	5.92E+04
210	6.31E+00	1.79E+05	2.78E+05	190	6.31E-01	4.12E+04	8.32E+04
210	1.00E+01	2.67E+05	3.85E+05	190	1.00E+00	5.87E+04	1.17E+05
210	1.58E+01	3.90E+05	5.18E+05	190	1.58E+00	8.48E+04	1.62E+05
210	2.51E+01	5.58E+05	6.82E+05	190	2.51E+00	1.23E+05	2.24E+05
210	3.98E+01	7.86E+05	8.75E+05	190	3.98E+00	1.78E+05	3.04E+05
210	6.31E+01	1.10E+06	1.10E+06	190	6.31E+00	2.56E+05	4.09E+05
210	1.00E+02	1.52E+06	1.33E+06	190	1.00E+01	3.67E+05	5.41E+05
200	1.00E-01	5.76E+03	1.35E+04	190	1.58E+01	5.18E+05	7.03E+05
200	1.58E-01	7.64E+03	1.98E+04	190	2.51E+01	7.24E+05	8.97E+05
200	2.51E-01	1.19E+04	2.89E+04	190	3.98E+01	1.00E+06	1.12E+06
200	3.98E-01	1.79E+04	4.20E+04	190	6.31E+01	1.37E+06	1.38E+06
200	6.31E-01	2.73E+04	6.11E+04	190	1.00E+02	1.88E+06	1.65E+06
200	1.00E+00	4.25E+04	8.90E+04	180	1.00E-01	1.86E+04	2.73E+04
200	1.58E+00	6.60E+04	1.29E+05	180	1.58E-01	2.47E+04	3.80E+04
200	2.51E+00	1.01E+05	1.84E+05	180	2.51E-01	3.32E+04	5.25E+04
200	3.98E+00	1.51E+05	2.58E+05	180	3.98E-01	4.42E+04	7.22E+04
200	6.31E+00	2.23E+05	3.54E+05	180	6.31E-01	5.93E+04	9.96E+04
200	1.00E+01	3.24E+05	4.77E+05	180	1.00E+00	8.10E+04	1.37E+05

Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
180	1.58E+00	1.12E+05	1.87E+05	160	6.31E-01	8.63E+04	1.14E+05
180	2.51E+00	1.55E+05	2.53E+05	160	1.00E+00	1.12E+05	1.54E+05
180	3.98E+00	2.18E+05	3.40E+05	160	1.58E+00	1.48E+05	2.08E+05
180	6.31E+00	3.05E+05	4.52E+05	160	2.51E+00	1.99E+05	2.78E+05
180	1.00E+01	4.27E+05	5.91E+05	160	3.98E+00	2.69E+05	3.66E+05
180	1.58E+01	5.93E+05	7.60E+05	160	6.31E+00	3.67E+05	4.79E+05
180	2.51E+01	8.15E+05	9.63E+05	160	1.00E+01	5.00E+05	6.17E+05
180	3.98E+01	1.11E+06	1.19E+06	160	1.58E+01	6.78E+05	7.81E+05
180	6.31E+01	1.51E+06	1.45E+06	160	2.51E+01	9.12E+05	9.71E+05
180	1.00E+02	2.05E+06	1.73E+06	160	3.98E+01	1.22E+06	1.18E+06
170	1.00E-01	2.91E+04	3.46E+04	160	6.31E+01	1.62E+06	1.41E+06
170	1.58E-01	3.74E+04	4.68E+04	160	1.00E+02	2.15E+06	1.64E+06
170	2.51E-01	4.76E+04	6.27E+04	150	1.00E-01	4.21E+04	3.93E+04
170	3.98E-01	6.14E+04	8.51E+04	150	1.58E-01	5.08E+04	5.08E+04
170	6.31E-01	1.84E+05	4.42E+03	150	2.51E-01	6.19E+04	6.72E+04
170	1.00E+00	1.29E+05	1.56E+05	150	3.98E-01	7.68E+04	8.96E+04
170	1.58E+00	1.41E+05	2.04E+05	150	6.31E-01	9.63E+04	1.20E+05
170	2.51E+00	1.88E+05	2.71E+05	150	1.00E+00	1.23E+05	1.60E+05
170	3.98E+00	2.53E+05	3.59E+05	150	1.58E+00	1.61E+05	2.15E+05
170	6.31E+00	3.36E+05	4.56E+05	150	2.51E+00	2.14E+05	2.84E+05
170	1.00E+01	4.51E+05	5.80E+05	150	3.98E+00	2.87E+05	3.72E+05
170	1.58E+01	6.16E+05	7.39E+05	150	6.31E+00	3.88E+05	4.82E+05
170	2.51E+01	8.29E+05	9.24E+05	150	1.00E+01	5.24E+05	6.16E+05
170	3.98E+01	1.12E+06	1.14E+06	150	1.58E+01	7.04E+05	7.72E+05
170	6.31E+01	1.49E+06	1.36E+06	150	2.51E+01	9.38E+05	9.52E+05
170	1.00E+02	1.99E+06	1.59E+06	150	3.98E+01	1.24E+06	1.14E+06
160	1.00E-01	3.57E+04	3.61E+04	150	6.31E+01	1.63E+06	1.35E+06
160	1.58E-01	4.36E+04	4.75E+04	150	1.00E+02	2.14E+06	1.54E+06
160	2.51E-01	5.39E+04	6.31E+04	140	1.00E-01	4.88E+04	4.25E+04
160	3.98E-01	6.79E+04	8.50E+04	140	1.58E-01	5.78E+04	5.48E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
140	2.51E-01	6.99E+04	7.20E+04	129	1.00E-01	9.05E+06	3.64E+06
140	3.98E-01	8.61E+04	9.50E+04	129	1.58E-01	1.00E+07	3.98E+06
140	6.31E-01	1.03E+05	1.21E+05	129	2.51E-01	1.11E+07	4.16E+06
140	1.00E+00	1.31E+05	1.62E+05	129	3.98E-01	1.22E+07	4.43E+06
140	1.58E+00	1.71E+05	2.15E+05	129	6.31E-01	1.31E+07	4.77E+06
140	2.51E+00	2.25E+05	2.82E+05	129	1.00E+00	1.44E+07	5.19E+06
140	3.98E+00	3.00E+05	3.69E+05	129	1.58E+00	1.52E+07	5.20E+06
140	6.31E+00	4.02E+05	4.74E+05	129	2.51E+00	1.63E+07	5.19E+06
140	1.00E+01	5.37E+05	5.99E+05	129	3.98E+00	1.71E+07	5.08E+06
140	1.58E+01	7.16E+05	7.45E+05	129	6.31E+00	1.89E+07	4.57E+06
140	2.51E+01	9.45E+05	9.06E+05	129	1.00E+01	2.01E+07	3.85E+06
140	3.98E+01	1.24E+06	1.08E+06	129	1.58E+01	2.02E+07	2.31E+06
140	6.31E+01	1.61E+06	1.25E+06	129	2.51E+01	2.16E+07	5.98E+05
140	1.00E+02	2.09E+06	1.42E+06	129	3.98E+01	2.23E+07	0.00E+00
130	1.00E-01	3.94E+05	4.45E+04	129	6.31E+01	2.31E+07	0.00E+00
130	1.58E-01	4.63E+05	5.80E+04	129	1.00E+02	2.45E+07	0.00E+00
130	2.51E-01	5.76E+05	7.57E+04	128	1.00E-01	2.85E+04	1.57E+04
130	3.98E-01	7.23E+05	1.00E+05	128	1.58E-01	3.18E+04	1.96E+04
130	6.31E-01	9.36E+05	1.33E+05	128	2.51E-01	3.63E+04	2.52E+04
130	1.00E+00	1.23E+06	1.76E+05	128	3.98E-01	4.21E+04	3.24E+04
130	1.58E+00	1.58E+06	2.33E+05	128	6.31E-01	5.02E+04	4.23E+04
130	2.51E+00	2.23E+06	3.05E+05	128	1.00E+00	6.10E+04	5.52E+04
130	3.98E+00	2.53E+06	3.95E+05	128	1.58E+00	7.61E+04	7.22E+04
130	6.31E+00	3.35E+06	5.02E+05	128	2.51E+00	9.72E+04	9.39E+04
130	1.00E+01	3.94E+06	6.30E+05	128	3.98E+00	1.26E+05	1.21E+05
130	1.58E+01	4.98E+06	7.73E+05	128	6.31E+00	1.67E+05	1.55E+05
130	2.51E+01	5.82E+06	9.31E+05	128	1.00E+01	2.24E+05	1.94E+05
130	3.98E+01	6.43E+06	1.09E+06	128	1.58E+01	3.02E+05	2.39E+05
130	6.31E+01	7.71E+06	1.26E+06	128	2.51E+01	4.02E+05	2.89E+05
130	1.00E+02	8.49E+06	1.40E+06	128	3.98E+01	5.22E+05	3.41E+05

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
128	6.31E+01	6.62E+05	3.92E+05	126	2.51E+01	3.97E+05	2.73E+05
128	1.00E+02	8.29E+05	4.43E+05	126	3.98E+01	5.10E+05	3.19E+05
127	1.00E-01	1.67E+07	4.52E+06	126	6.31E+01	6.41E+05	3.63E+05
127	1.58E-01	1.84E+07	4.86E+06	126	1.00E+02	7.96E+05	4.08E+05
127	2.51E-01	1.97E+07	5.01E+06	125	1.00E-01	2.25E+07	3.90E+06
127	3.98E-01	2.09E+07	5.49E+06	125	1.58E-01	2.36E+07	5.30E+06
127	6.31E-01	2.29E+07	5.55E+06	125	2.51E-01	2.51E+07	5.77E+06
127	1.00E+00	2.41E+07	6.99E+06	125	3.98E-01	2.62E+07	5.69E+06
127	1.58E+00	2.67E+07	5.53E+06	125	6.31E-01	2.86E+07	5.95E+06
127	2.51E+00	2.91E+07	6.40E+06	125	1.00E+00	2.94E+07	5.51E+06
127	3.98E+00	3.13E+07	6.38E+06	125	1.58E+00	3.13E+07	6.19E+06
127	6.31E+00	3.29E+07	6.44E+06	125	2.51E+00	3.46E+07	6.75E+06
127	1.00E+01	3.46E+07	4.42E+06	125	3.98E+00	3.59E+07	5.23E+06
127	1.58E+01	3.64E+07	2.27E+06	125	6.31E+00	3.83E+07	4.39E+06
127	2.51E+01	3.86E+07	0.00E+00	125	1.00E+01	3.99E+07	3.61E+06
127	3.98E+01	3.87E+07	0.00E+00	125	1.58E+01	4.27E+07	4.26E+05
127	6.31E+01	3.47E+07	0.00E+00	125	2.51E+01	4.39E+07	0.00E+00
127	1.00E+02	2.77E+07	0.00E+00	125	3.98E+01	4.13E+07	0.00E+00
126	1.00E-01	2.74E+04	1.55E+04	125	6.31E+01	3.84E+07	0.00E+00
126	1.58E-01	3.07E+04	1.92E+04	125	1.00E+02	2.74E+07	0.00E+00
126	2.51E-01	3.53E+04	2.45E+04	124	1.00E-01	2.69E+04	1.53E+04
126	3.98E-01	4.10E+04	3.20E+04	124	1.58E-01	3.06E+04	2.00E+04
126	6.31E-01	4.88E+04	4.14E+04	124	2.51E-01	3.60E+04	2.71E+04
126	1.00E+00	5.93E+04	5.39E+04	124	3.98E-01	4.34E+04	3.71E+04
126	1.58E+00	7.39E+04	7.05E+04	124	6.31E-01	5.42E+04	5.04E+04
126	2.51E+00	9.41E+04	9.14E+04	124	1.00E+00	6.88E+04	6.82E+04
126	3.98E+00	1.22E+05	1.18E+05	124	1.58E+00	8.97E+04	9.16E+04
126	6.31E+00	1.63E+05	1.50E+05	124	2.51E+00	1.19E+05	1.22E+05
126	1.00E+01	2.24E+05	1.86E+05	124	3.98E+00	1.66E+05	1.59E+05
126	1.58E+01	3.02E+05	2.28E+05	124	6.31E+00	2.38E+05	2.04E+05

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
124	1.00E+01	3.34E+05	2.58E+05	122	3.98E+00	3.99E+07	8.95E+06
124	1.58E+01	4.54E+05	3.19E+05	122	6.31E+00	4.52E+07	9.94E+06
124	2.51E+01	6.01E+05	3.83E+05	122	1.00E+01	5.05E+07	1.06E+07
124	3.98E+01	7.79E+05	4.49E+05	122	1.58E+01	4.57E+07	5.69E+06
124	6.31E+01	9.85E+05	5.08E+05	122	2.51E+01	5.12E+07	1.26E+06
124	1.00E+02	1.24E+06	5.59E+05	122	3.98E+01	5.34E+07	0.00E+00
123	1.00E-01	2.76E+07	5.56E+06	122	6.31E+01	4.51E+07	0.00E+00
123	1.58E-01	2.91E+07	6.57E+06	122	1.00E+02	2.98E+07	0.00E+00
123	2.51E-01	3.10E+07	6.83E+06	121	1.00E-01	2.88E+07	4.26E+06
123	3.98E-01	3.29E+07	6.95E+06	121	1.58E-01	2.99E+07	4.95E+06
123	6.31E-01	3.51E+07	7.44E+06	121	2.51E-01	3.22E+07	5.07E+06
123	1.00E+00	3.71E+07	7.81E+06	121	3.98E-01	3.36E+07	6.50E+06
123	1.58E+00	3.95E+07	8.55E+06	121	6.31E-01	3.59E+07	6.61E+06
123	2.51E+00	4.10E+07	7.94E+06	121	1.00E+00	3.69E+07	6.01E+06
123	3.98E+00	4.45E+07	7.15E+06	121	1.58E+00	3.99E+07	6.60E+06
123	6.31E+00	4.76E+07	5.60E+06	121	2.51E+00	4.35E+07	6.39E+06
123	1.00E+01	5.07E+07	3.70E+06	121	3.98E+00	4.61E+07	6.64E+06
123	1.58E+01	5.40E+07	0.00E+00	121	6.31E+00	4.76E+07	6.18E+06
123	2.51E+01	5.42E+07	0.00E+00	121	1.00E+01	4.94E+07	2.89E+06
123	3.98E+01	5.07E+07	0.00E+00	121	1.58E+01	5.19E+07	0.00E+00
123	6.31E+01	4.52E+07	0.00E+00	121	2.51E+01	5.14E+07	0.00E+00
123	1.00E+02	2.86E+07	0.00E+00	121	3.98E+01	4.90E+07	0.00E+00
122	1.00E-01	1.31E+07	5.79E+06	121	6.31E+01	4.15E+07	0.00E+00
122	1.58E-01	1.85E+07	4.15E+06	121	1.00E+02	2.81E+07	0.00E+00
122	2.51E-01	2.24E+07	5.08E+06				
122	3.98E-01	2.57E+07	6.31E+06				
122	6.31E-01	2.85E+07	6.34E+06				
122	1.00E+00	3.02E+07	6.94E+06				
122	1.58E+00	3.28E+07	7.38E+06				
122	2.51E+00	3.75E+07	7.36E+06				

22. Data of frequency, storage modulus and loss modulus of HDPE (R1760)

Parallel plates 25 mm, gap = 0.602 mm, % strain = 6, 5 point per decade at 190 °C.

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
230	1.00E-01	2.48E+03	4.35E+03	220	1.58E+01	1.46E+05	1.47E+05
230	1.58E-01	3.83E+03	6.30E+03	220	2.51E+01	2.01E+05	1.91E+05
230	2.51E-01	4.64E+03	8.47E+03	220	3.98E+01	2.72E+05	2.43E+05
230	3.98E-01	6.46E+03	1.18E+04	220	6.31E+01	3.62E+05	3.01E+05
230	6.31E-01	9.34E+03	1.64E+04	220	1.00E+02	4.77E+05	3.70E+05
230	1.00E+00	1.39E+04	2.34E+04	210	1.00E-01	8.58E+03	4.97E+03
230	1.58E+00	2.06E+04	3.30E+04	210	1.58E-01	9.62E+03	6.92E+03
230	2.51E+00	3.11E+04	4.71E+04	210	2.51E-01	1.13E+04	9.29E+03
230	3.98E+00	4.65E+04	6.63E+04	210	3.98E-01	1.35E+04	1.25E+04
230	6.31E+00	6.73E+04	9.06E+04	210	6.31E-01	1.67E+04	1.69E+04
230	1.00E+01	9.61E+04	1.22E+05	210	1.00E+00	2.10E+04	2.33E+04
230	1.58E+01	1.35E+05	1.59E+05	210	1.58E+00	2.79E+04	3.16E+04
230	2.51E+01	1.87E+05	2.04E+05	210	2.51E+00	3.88E+04	4.30E+04
230	3.98E+01	2.54E+05	2.57E+05	210	3.98E+00	5.65E+04	5.90E+04
230	6.31E+01	3.44E+05	3.20E+05	210	6.31E+00	8.24E+04	8.12E+04
230	1.00E+02	4.58E+05	3.94E+05	210	1.00E+01	1.16E+05	1.10E+05
220	1.00E-01	5.44E+03	4.66E+03	210	1.58E+01	1.60E+05	1.46E+05
220	1.58E-01	6.56E+03	6.29E+03	210	2.51E+01	2.17E+05	1.88E+05
220	2.51E-01	8.08E+03	8.47E+03	210	3.98E+01	2.89E+05	2.36E+05
220	3.98E-01	1.00E+04	1.17E+04	210	6.31E+01	3.80E+05	2.91E+05
220	6.31E-01	1.27E+04	1.60E+04	210	1.00E+02	4.95E+05	3.55E+05
220	1.00E+00	1.66E+04	2.21E+04	200	1.00E-01	1.15E+04	6.05E+03
220	1.58E+00	2.26E+04	3.04E+04	200	1.58E-01	1.30E+04	7.83E+03
220	2.51E+00	3.22E+04	4.20E+04	200	2.51E-01	1.46E+04	1.07E+04
220	3.98E+00	4.81E+04	5.81E+04	200	3.98E-01	1.73E+04	1.43E+04
220	6.31E+00	7.17E+04	8.04E+04	200	6.31E-01	2.13E+04	1.88E+04
220	1.00E+01	1.04E+05	1.10E+05	200	1.00E+00	2.68E+04	2.54E+04

Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
200	1.58E+00	3.51E+04	3.42E+04	180	6.31E-01	4.03E+04	2.68E+04
200	2.51E+00	4.85E+04	4.61E+04	180	1.00E+00	5.09E+04	3.55E+04
200	3.98E+00	6.89E+04	6.30E+04	180	1.58E+00	6.48E+04	4.79E+04
200	6.31E+00	9.70E+04	8.58E+04	180	2.51E+00	8.29E+04	6.47E+04
200	1.00E+01	1.33E+05	1.15E+05	180	3.98E+00	1.06E+05	8.63E+04
200	1.58E+01	1.79E+05	1.51E+05	180	6.31E+00	1.36E+05	1.14E+05
200	2.51E+01	2.38E+05	1.93E+05	180	1.00E+01	1.74E+05	1.48E+05
200	3.98E+01	3.12E+05	2.40E+05	180	1.58E+01	2.23E+05	1.89E+05
200	6.31E+01	4.05E+05	2.93E+05	180	2.51E+01	2.87E+05	2.36E+05
200	1.00E+02	5.21E+05	3.53E+05	180	3.98E+01	3.68E+05	2.89E+05
190	1.00E-01	1.54E+04	7.55E+03	180	6.31E+01	4.69E+05	3.48E+05
190	1.58E-01	1.68E+04	9.89E+03	180	1.00E+02	5.97E+05	4.12E+05
190	2.51E-01	1.98E+04	1.27E+04	170	1.00E-01	2.93E+04	1.37E+04
190	3.98E-01	2.32E+04	1.68E+04	170	1.58E-01	3.31E+04	1.67E+04
190	6.31E-01	2.83E+04	2.19E+04	170	2.51E-01	3.84E+04	2.09E+04
190	1.00E+00	3.57E+04	2.91E+04	170	3.98E-01	4.51E+04	2.67E+04
190	1.58E+00	4.75E+04	3.89E+04	170	6.31E-01	5.37E+04	3.46E+04
190	2.51E+00	6.44E+04	5.26E+04	170	1.00E+00	6.46E+04	4.53E+04
190	3.98E+00	8.73E+04	7.19E+04	170	1.58E+00	7.85E+04	5.94E+04
190	6.31E+00	1.17E+05	9.71E+04	170	2.51E+00	9.64E+04	7.78E+04
190	1.00E+01	1.54E+05	1.29E+05	170	3.98E+00	1.20E+05	1.01E+05
190	1.58E+01	2.02E+05	1.67E+05	170	6.31E+00	1.50E+05	1.31E+05
190	2.51E+01	2.64E+05	2.10E+05	170	1.00E+01	1.89E+05	1.67E+05
190	3.98E+01	3.42E+05	2.59E+05	170	1.58E+01	2.39E+05	2.10E+05
190	6.31E+01	4.39E+05	3.12E+05	170	2.51E+01	3.04E+05	2.60E+05
190	1.00E+02	5.60E+05	3.71E+05	170	3.98E+01	3.86E+05	3.18E+05
180	1.00E-01	2.14E+04	9.72E+03	170	6.31E+01	4.91E+05	3.83E+05
180	1.58E-01	2.38E+04	1.25E+04	170	1.00E+02	6.23E+05	4.53E+05
180	2.51E-01	2.82E+04	1.57E+04	160	1.00E-01	3.67E+04	1.73E+04
180	3.98E-01	3.30E+04	2.04E+04	160	1.58E-01	4.13E+04	2.09E+04

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
160	2.51E-01	4.70E+04	2.59E+04	140	1.00E-01	4.48E+04	2.04E+04
160	3.98E-01	5.40E+04	3.23E+04	140	1.58E-01	4.97E+04	2.48E+04
160	6.31E-01	6.27E+04	4.11E+04	140	2.51E-01	5.57E+04	3.06E+04
160	1.00E+00	7.36E+04	5.27E+04	140	3.98E-01	6.34E+04	3.83E+04
160	1.58E+00	8.78E+04	6.77E+04	140	6.31E-01	7.31E+04	4.83E+04
160	2.51E+00	1.06E+05	8.69E+04	140	1.00E+00	8.54E+04	6.15E+04
160	3.98E+00	1.30E+05	1.12E+05	140	1.58E+00	1.02E+05	7.84E+04
160	6.31E+00	1.62E+05	1.42E+05	140	2.51E+00	1.23E+05	9.98E+04
160	1.00E+01	2.02E+05	1.79E+05	140	3.98E+00	1.50E+05	1.26E+05
160	1.58E+01	2.54E+05	2.24E+05	140	6.31E+00	1.85E+05	1.59E+05
160	2.51E+01	3.21E+05	2.76E+05	140	1.00E+01	2.30E+05	1.98E+05
160	3.98E+01	4.05E+05	3.35E+05	140	1.58E+01	2.88E+05	2.43E+05
160	6.31E+01	5.11E+05	4.02E+05	140	2.51E+01	3.61E+05	2.96E+05
160	1.00E+02	6.47E+05	4.75E+05	140	3.98E+01	4.52E+05	3.54E+05
150	1.00E-01	4.16E+04	1.90E+04	140	6.31E+01	5.65E+05	4.17E+05
150	1.58E-01	4.64E+04	2.29E+04	140	1.00E+02	7.06E+05	4.84E+05
150	2.51E-01	5.23E+04	2.82E+04	130	1.00E-01	4.76E+04	2.20E+04
150	3.98E-01	5.94E+04	3.52E+04	130	1.58E-01	5.31E+04	2.69E+04
150	6.31E-01	6.85E+04	4.46E+04	130	2.51E-01	5.98E+04	3.33E+04
150	1.00E+00	7.98E+04	5.69E+04	130	3.98E-01	6.83E+04	4.19E+04
150	1.58E+00	9.48E+04	7.27E+04	130	6.31E-01	7.90E+04	5.29E+04
150	2.51E+00	1.14E+05	9.29E+04	130	1.00E+00	9.26E+04	6.74E+04
150	3.98E+00	1.39E+05	1.18E+05	130	1.58E+00	1.10E+05	8.57E+04
150	6.31E+00	1.72E+05	1.50E+05	130	2.51E+00	1.34E+05	1.09E+05
150	1.00E+01	2.15E+05	1.87E+05	130	3.98E+00	1.64E+05	1.37E+05
150	1.58E+01	2.69E+05	2.32E+05	130	6.31E+00	2.02E+05	1.72E+05
150	2.51E+01	3.39E+05	2.84E+05	130	1.00E+01	2.52E+05	2.13E+05
150	3.98E+01	4.26E+05	3.44E+05	130	1.58E+01	3.15E+05	2.60E+05
150	6.31E+01	5.35E+05	4.09E+05	130	2.51E+01	3.94E+05	3.13E+05
150	1.00E+02	6.73E+05	4.79E+05	130	3.98E+01	4.92E+05	3.72E+05

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
130	6.31E+01	6.11E+05	4.33E+05	128	2.51E+01	3.89E+05	3.05E+05
130	1.00E+02	7.60E+05	4.98E+05	128	3.98E+01	4.84E+05	3.61E+05
129	1.00E-01	4.78E+04	2.17E+04	128	6.31E+01	6.00E+05	4.20E+05
129	1.58E-01	5.33E+04	2.66E+04	128	1.00E+02	7.44E+05	4.82E+05
129	2.51E-01	6.00E+04	3.30E+04	127	1.00E-01	4.80E+04	2.16E+04
129	3.98E-01	6.83E+04	4.15E+04	127	1.58E-01	5.33E+04	2.65E+04
129	6.31E-01	7.88E+04	5.26E+04	127	2.51E-01	5.99E+04	3.29E+04
129	1.00E+00	9.25E+04	6.68E+04	127	3.98E-01	6.82E+04	4.12E+04
129	1.58E+00	1.10E+05	8.48E+04	127	6.31E-01	7.87E+04	5.24E+04
129	2.51E+00	1.33E+05	1.08E+05	127	1.00E+00	9.23E+04	6.65E+04
129	3.98E+00	1.63E+05	1.36E+05	127	1.58E+00	1.10E+05	8.44E+04
129	6.31E+00	2.01E+05	1.70E+05	127	2.51E+00	1.33E+05	1.07E+05
129	1.00E+01	2.50E+05	2.10E+05	127	3.98E+00	1.62E+05	1.35E+05
129	1.58E+01	3.12E+05	2.56E+05	127	6.31E+00	2.01E+05	1.68E+05
129	2.51E+01	3.90E+05	3.08E+05	127	1.00E+01	2.49E+05	2.07E+05
129	3.98E+01	4.86E+05	3.65E+05	127	1.58E+01	3.11E+05	2.52E+05
129	6.31E+01	6.04E+05	4.25E+05	127	2.51E+01	3.88E+05	3.03E+05
129	1.00E+02	7.50E+05	4.88E+05	127	3.98E+01	4.83E+05	3.58E+05
128	1.00E-01	4.79E+04	2.17E+04	127	6.31E+01	5.98E+05	4.17E+05
128	1.58E-01	5.33E+04	2.65E+04	127	1.00E+02	7.41E+05	4.78E+05
128	2.51E-01	5.99E+04	3.29E+04	126	1.00E-01	4.91E+04	2.38E+04
128	3.98E-01	6.82E+04	4.13E+04	126	1.58E-01	5.78E+04	3.26E+04
128	6.31E-01	7.87E+04	5.23E+04	126	2.51E-01	7.05E+04	4.51E+04
128	1.00E+00	9.24E+04	6.65E+04	126	3.98E-01	8.72E+04	6.16E+04
128	1.58E+00	1.10E+05	8.45E+04	126	6.31E-01	1.09E+05	8.38E+04
128	2.51E+00	1.33E+05	1.07E+05	126	1.00E+00	1.36E+05	1.11E+05
128	3.98E+00	1.62E+05	1.35E+05	126	1.58E+00	1.70E+05	1.43E+05
128	6.31E+00	2.01E+05	1.69E+05	126	2.51E+00	2.14E+05	1.84E+05
128	1.00E+01	2.49E+05	2.08E+05	126	3.98E+00	2.71E+05	2.34E+05
128	1.58E+01	3.11E+05	2.54E+05	126	6.31E+00	3.45E+05	2.93E+05

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
126	1.00E+01	4.41E+05	3.64E+05	124	3.98E+00	2.25E+06	3.36E+06
126	1.58E+01	5.62E+05	4.44E+05	124	6.31E+00	2.43E+06	3.63E+06
126	2.51E+01	7.14E+05	5.34E+05	124	1.00E+01	2.71E+06	4.05E+06
126	3.98E+01	9.00E+05	6.31E+05	124	1.58E+01	3.13E+06	4.68E+06
126	6.31E+01	1.13E+06	7.29E+05	124	2.61E+01	3.86E+06	5.40E+06
126	1.00E+02	1.41E+06	8.26E+05	124	3.98E+01	5.42E+06	6.77E+06
125	1.00E-01	1.55E+06	1.80E+06	124	6.31E+01	9.75E+06	9.58E+06
125	1.58E-01	1.28E+06	1.89E+06	124	1.00E+02	3.19E+07	6.10E+05
125	2.51E-01	1.56E+06	2.22E+06	123	1.00E-01	2.84E+06	3.30E+06
125	3.98E-01	1.57E+06	2.42E+06	123	1.58E-01	2.04E+06	2.78E+06
125	6.31E-01	1.51E+06	2.52E+06	123	2.51E-01	1.84E+06	2.65E+06
125	1.00E+00	1.46E+06	2.69E+06	123	3.98E-01	1.75E+06	2.65E+06
125	1.58E+00	1.70E+06	3.38E+06	123	6.31E-01	1.61E+06	2.80E+06
125	2.51E+00	3.04E+06	5.02E+06	123	1.00E+00	1.63E+06	3.22E+06
125	3.98E+00	4.72E+06	6.08E+06	123	1.58E+00	1.84E+06	3.55E+06
125	6.31E+00	6.27E+06	7.11E+06	123	2.51E+00	2.60E+06	4.05E+06
125	1.00E+01	8.62E+06	7.75E+06	123	3.98E+00	3.12E+06	4.53E+06
125	1.58E+01	1.06E+07	8.85E+06	123	6.31E+00	3.72E+06	5.14E+06
125	2.51E+01	1.19E+07	9.48E+06	123	1.00E+01	4.79E+06	6.25E+06
125	3.98E+01	9.65E+06	9.28E+06	123	1.58E+01	6.78E+06	8.27E+06
125	6.31E+01	8.59E+06	8.68E+06	123	2.51E+01	1.10E+07	1.08E+07
125	1.00E+02	9.36E+06	8.59E+06	123	3.98E+01	2.35E+07	9.59E+06
124	1.00E-01	1.84E+06	2.54E+06	123	6.31E+01	2.80E+07	7.32E+06
124	1.58E-01	1.68E+06	2.20E+06	123	1.00E+02	3.06E+07	7.12E+05
124	2.51E-01	1.53E+06	2.22E+06	122	1.00E-01	4.27E+06	4.86E+06
124	3.98E-01	1.52E+06	2.23E+06	122	1.58E-01	2.77E+06	3.74E+06
124	6.31E-01	1.50E+06	2.23E+06	122	2.51E-01	2.60E+06	3.52E+06
124	1.00E+00	1.49E+06	2.58E+06	122	3.98E-01	2.67E+06	3.75E+06
124	1.58E+00	1.68E+06	2.91E+06	122	6.31E-01	2.51E+06	3.98E+06
124	2.51E+00	2.00E+06	3.17E+06	122	1.00E+00	2.55E+06	4.44E+06

Temp. (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)	Temp (°C)	ω (rad/s)	G' (dynes/cm^2)	G" (dynes/cm^2)
122	1.58E+00	4.36E+06	6.02E+06	120	6.31E-01	3.54E+06	2.65E+06
122	2.51E+00	5.23E+06	6.54E+06	120	1.00E+00	3.48E+06	2.57E+06
122	3.98E+00	6.11E+06	7.14E+06	120	1.58E+00	3.67E+06	3.50E+06
122	6.31E+00	7.70E+06	8.15E+06	120	2.51E+00	4.44E+06	3.68E+06
122	1.00E+01	9.90E+06	9.30E+06	120	3.98E+00	4.87E+06	3.77E+06
122	1.58E+01	1.26E+07	9.94E+06	120	6.31E+00	5.49E+06	3.91E+06
122	2.51E+01	1.68E+07	9.81E+06	120	1.00E+01	6.52E+06	4.06E+06
122	3.98E+01	2.04E+07	8.34E+06	120	1.58E+01	7.47E+06	4.04E+06
122	6.31E+01	2.24E+07	6.47E+06	120	2.51E+01	8.77E+06	3.78E+06
122	1.00E+02	2.46E+07	2.48E+06	120	3.98E+01	1.00E+07	2.99E+06
121	1.00E-01	8.60E+06	5.38E+06	120	6.31E+01	1.10E+07	2.08E+06
121	1.58E-01	5.12E+06	4.46E+06	120	1.00E+02	1.15E+07	1.25E+06
121	2.51E-01	4.08E+06	4.21E+06				
121	3.98E-01	4.97E+06	4.03E+06				
121	6.31E-01	4.48E+06	3.03E+06				
121	1.00E+00	4.21E+06	3.39E+06				
121	1.58E+00	4.85E+06	4.82E+06				
121	2.51E+00	5.50E+06	5.16E+06				
121	3.98E+00	6.06E+06	5.46E+06				
121	6.31E+00	6.99E+06	5.87E+06				
121	1.00E+01	8.46E+06	6.19E+06				
121	1.58E+01	9.94E+06	6.37E+06				
121	2.51E+01	1.18E+07	6.14E+06				
121	3.98E+01	1.37E+07	5.18E+06				
121	6.31E+01	1.52E+07	3.89E+06				
121	1.00E+02	1.64E+07	2.32E+06				
120	1.00E-01	5.14E+06	3.21E+06				
120	1.58E-01	3.70E+06	2.62E+06				
120	2.51E-01	3.48E+06	2.37E+06				
120	3.98E-01	3.40E+06	2.61E+06				

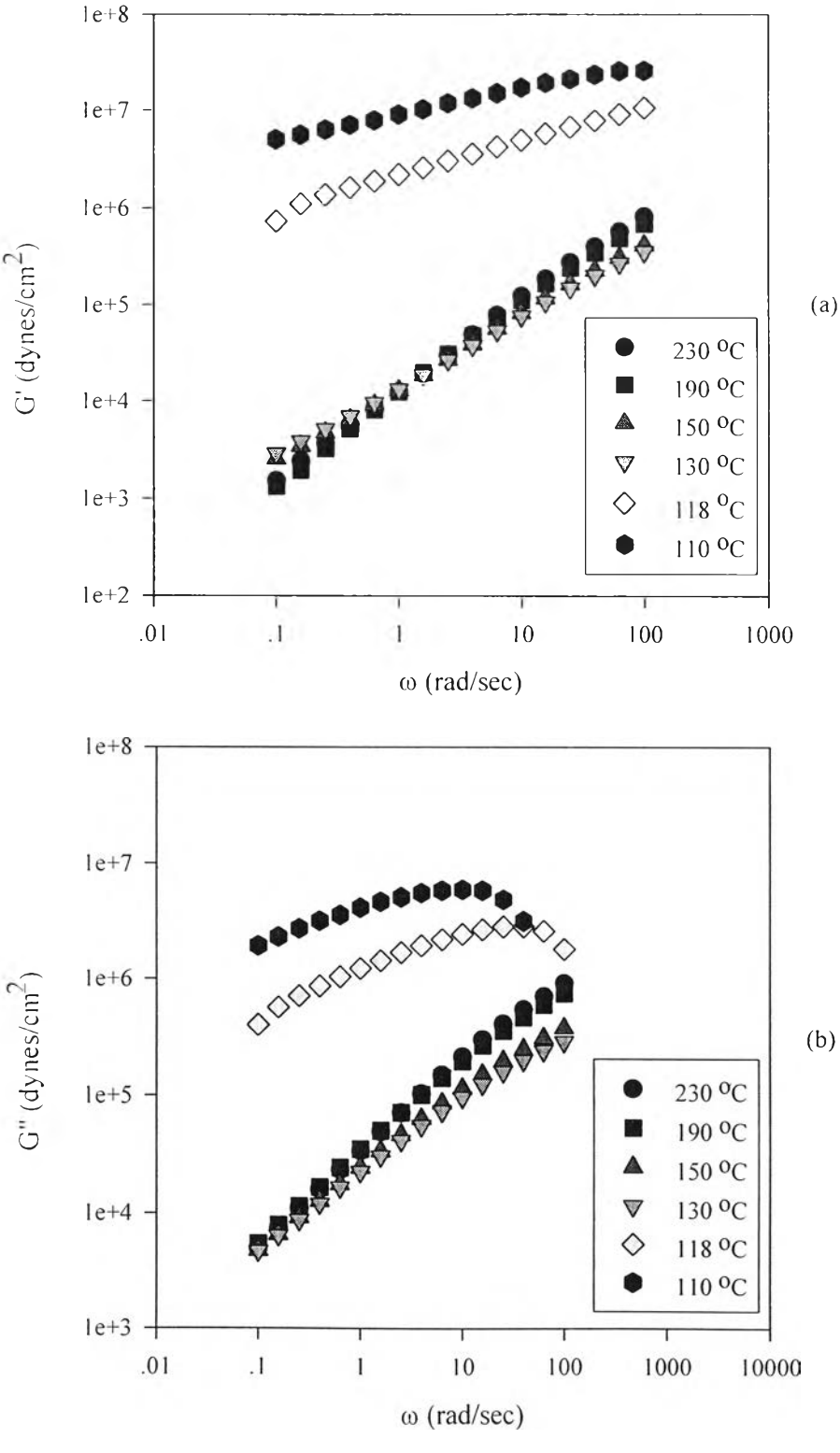


Figure A3 G vs. ω at of LLDPE (L2020F)at 190 °C; a) G′ vs. ω; b) G″ vs. ω.

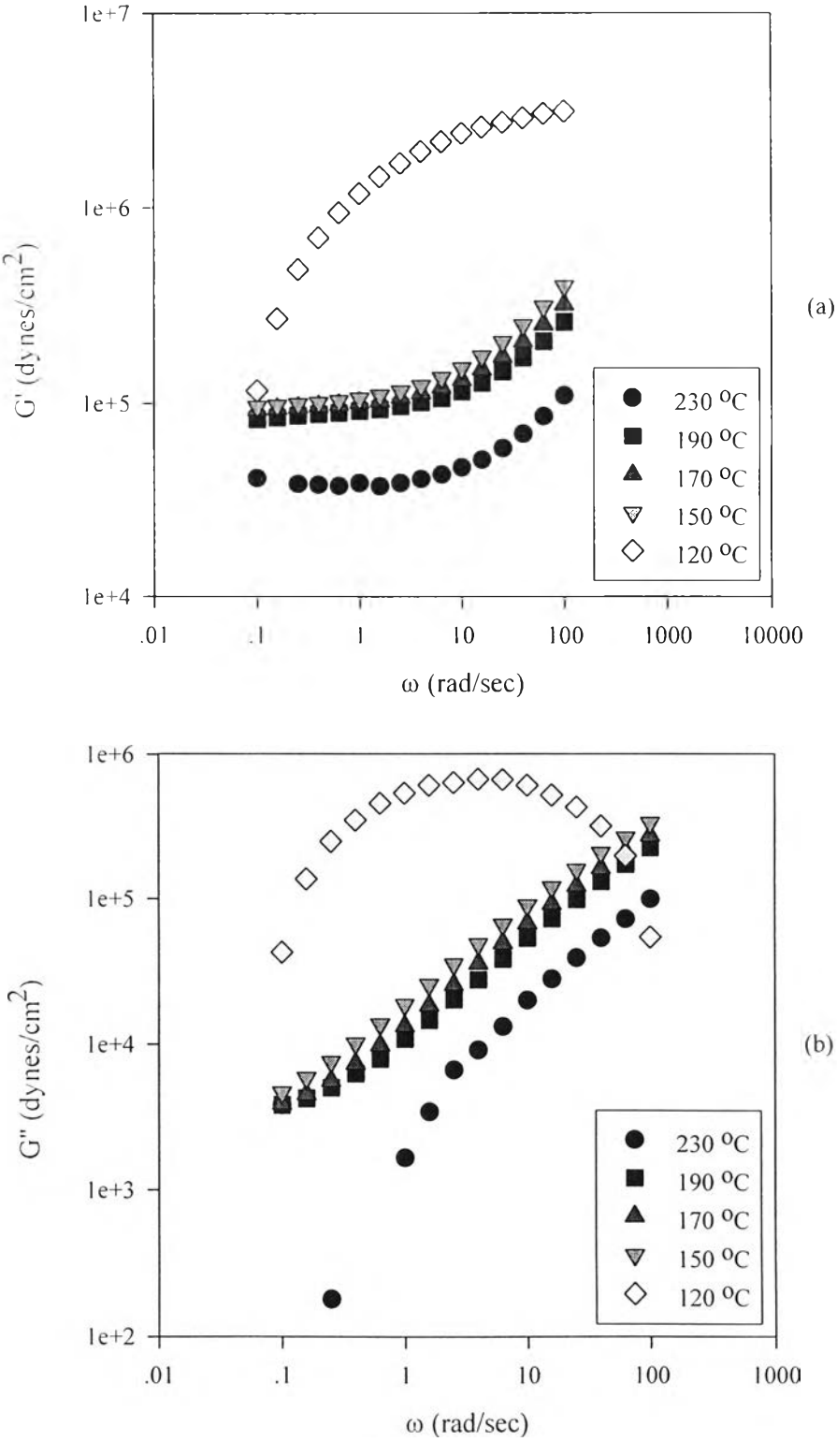


Figure A4 G vs. ω at of MDPE (M3204RU)at 190 °C; a) G′ vs. ω; b) G″ vs. ω.

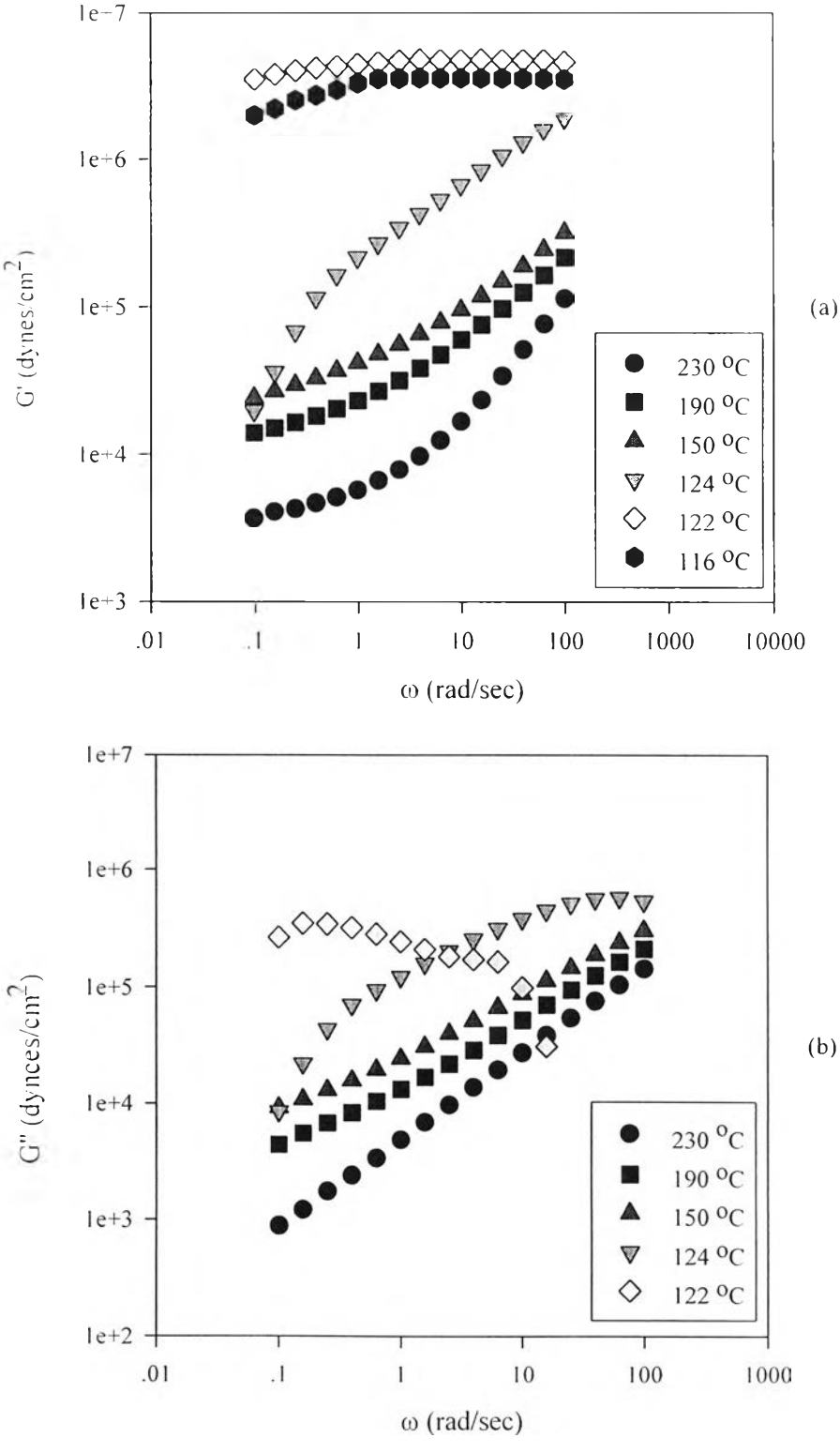


Figure A5 G vs. ω at of HDPE (N3260) at 190 °C; a) G′ vs. ω; b) G″ vs. ω.

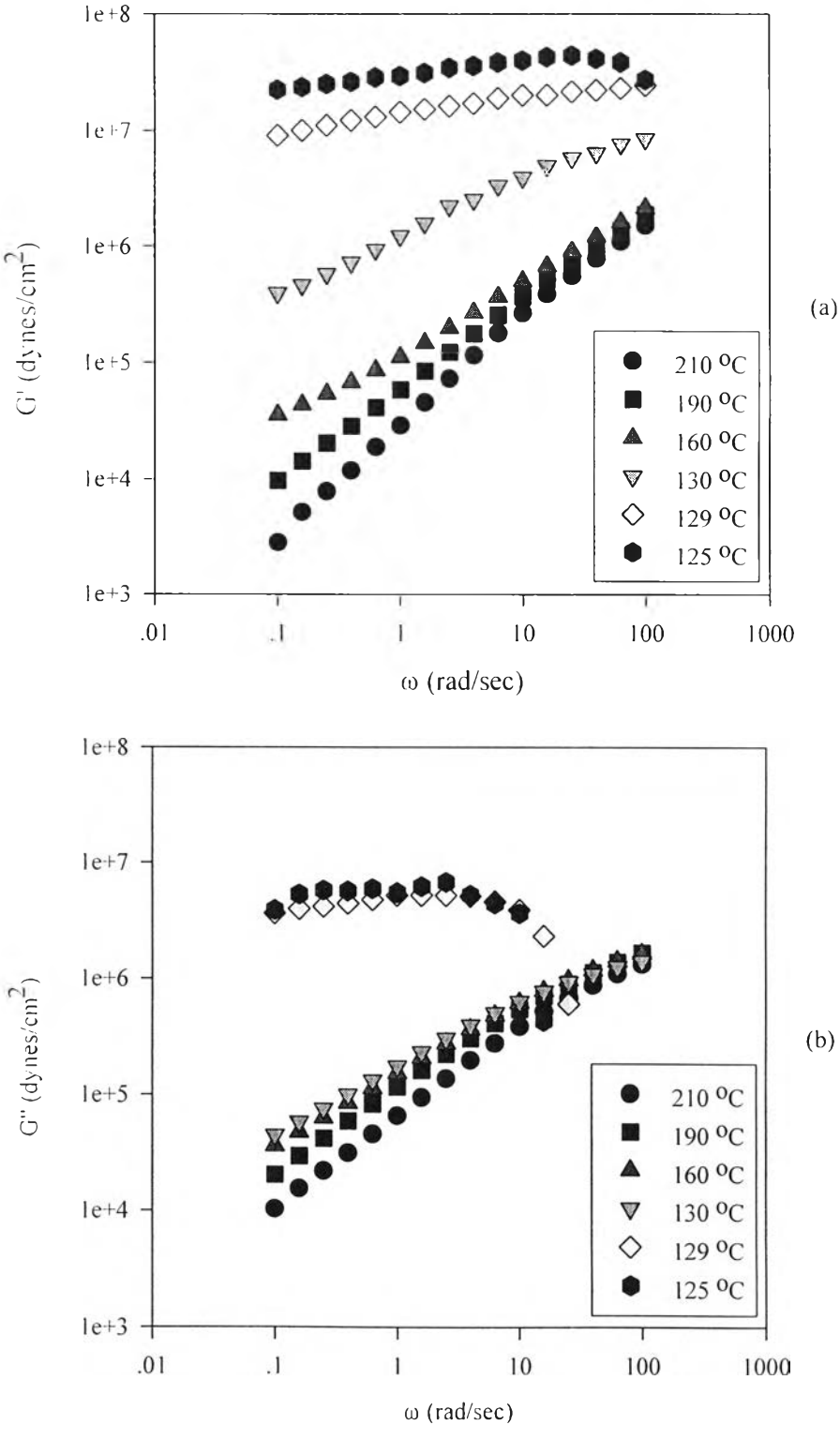


Figure A6 G vs. ω at of HDPE (H5690S)at 190 °C; a) G′ vs. ω; b) G″ vs. ω.

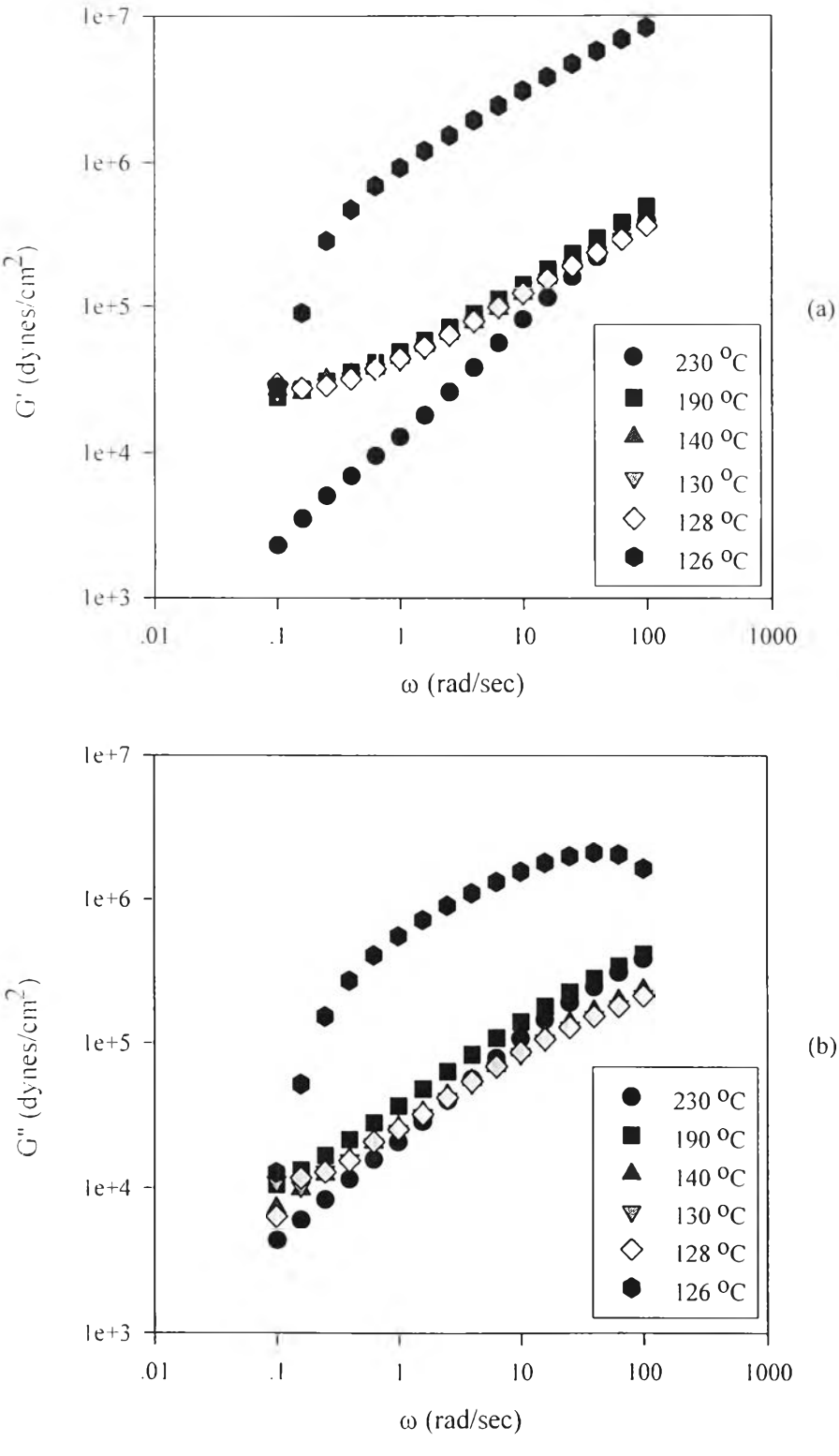


Figure A7 G vs. ω at of HDPE (R1760) at 190 °C; a) G′ vs. ω; b) G″ vs. ω.

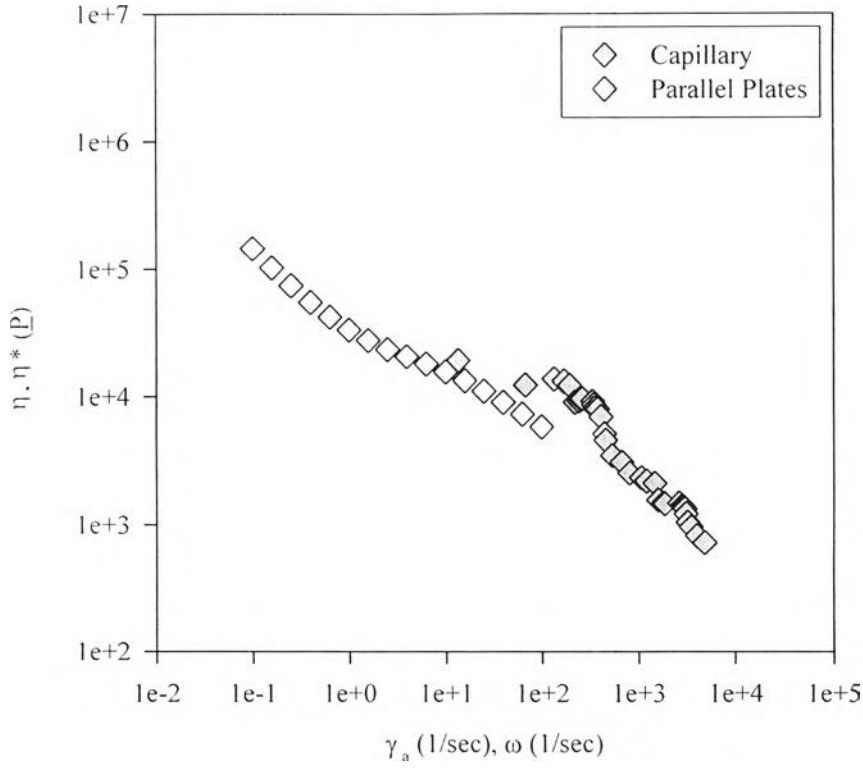


Figure A8 Cox-Merz rule of LLDPE (L2009F) at 190 °C.

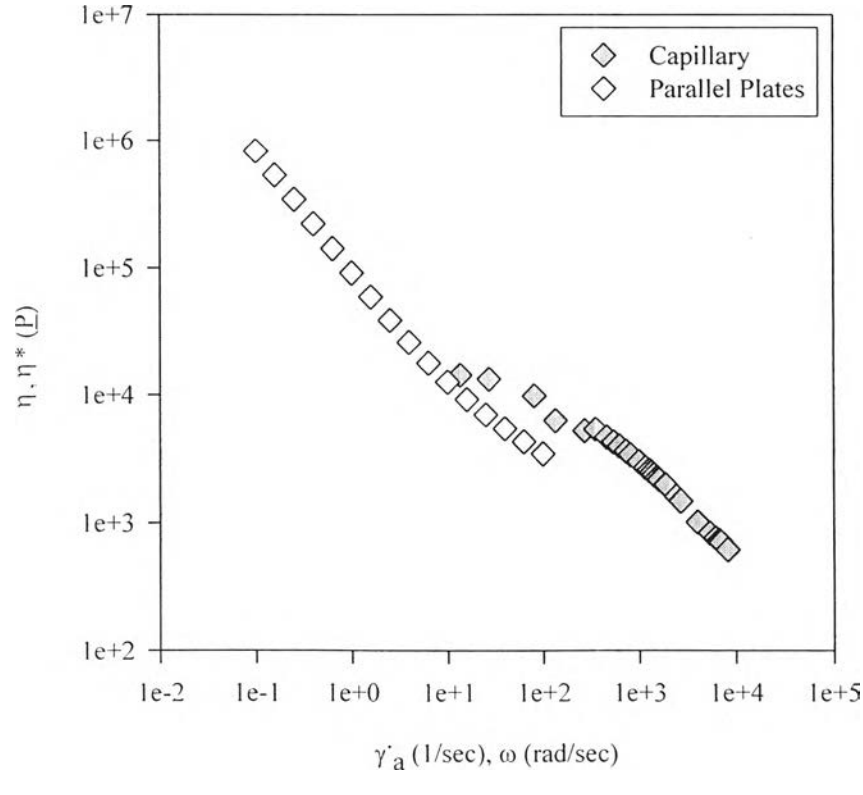


Figure A9 Cox-Merz rule of MDPE (M3204RU) at 190 °C.

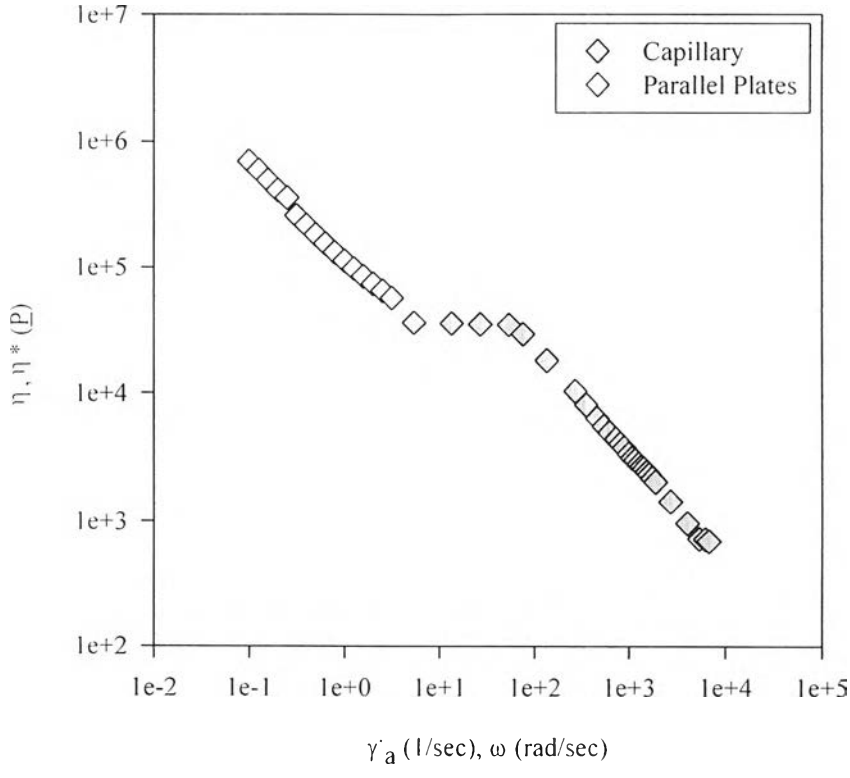


Figure A10 Cox-Merz rule of HDPE (N3260) at 190 °C.

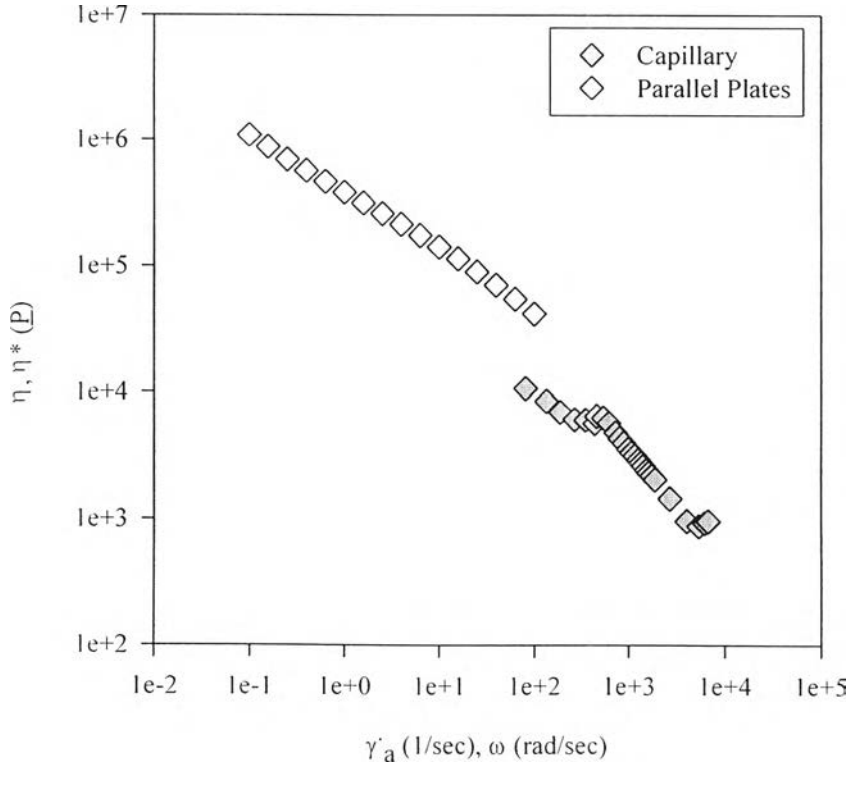


Figure A11 Cox-Merz rule of HDPE (R1760) at 190 °C.

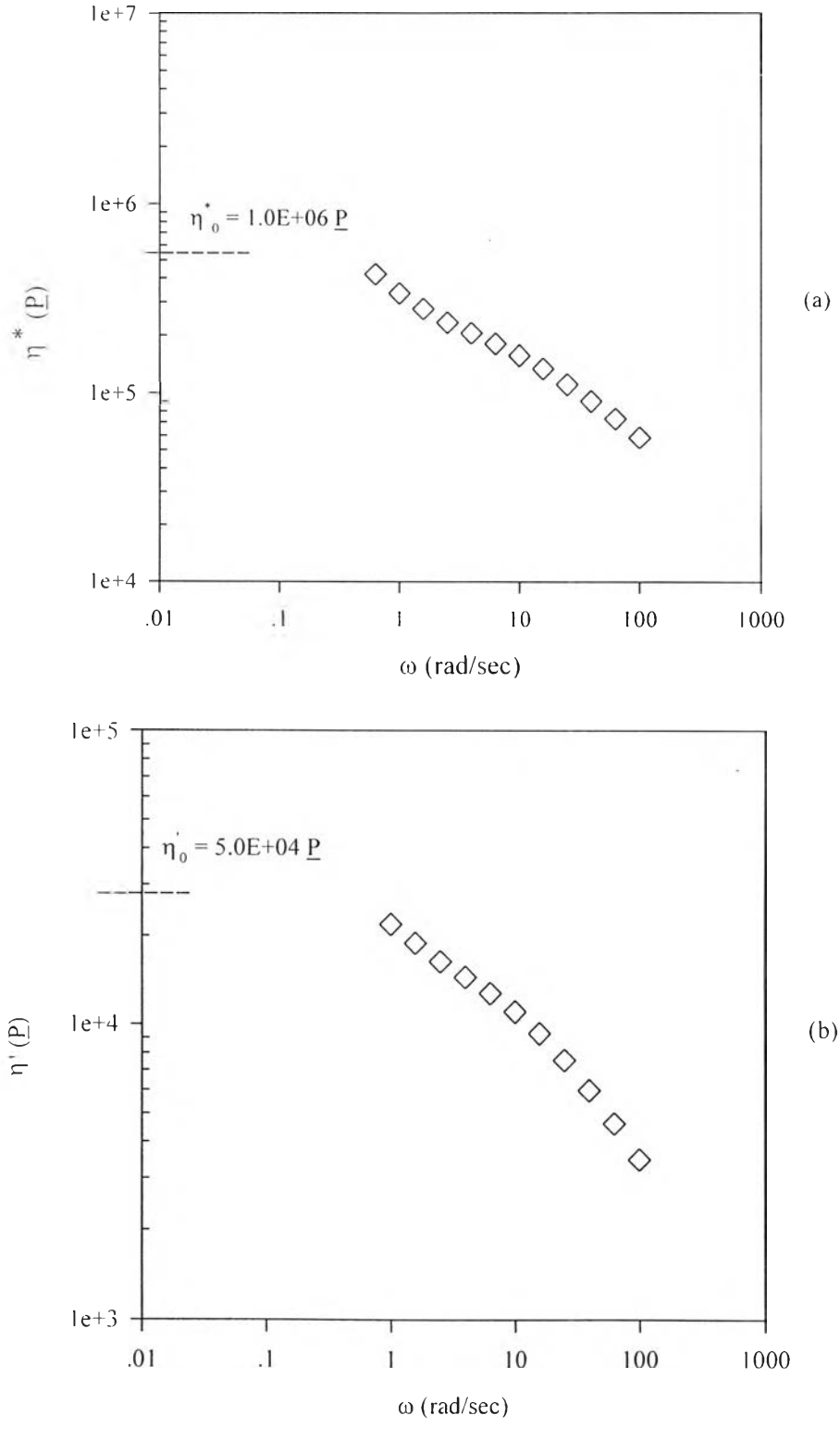
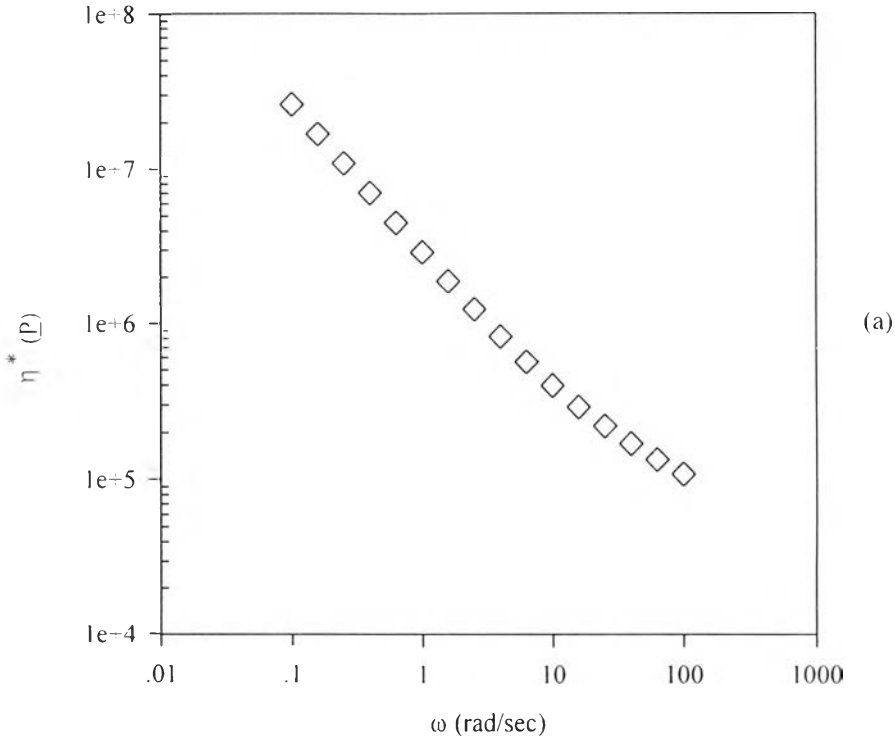
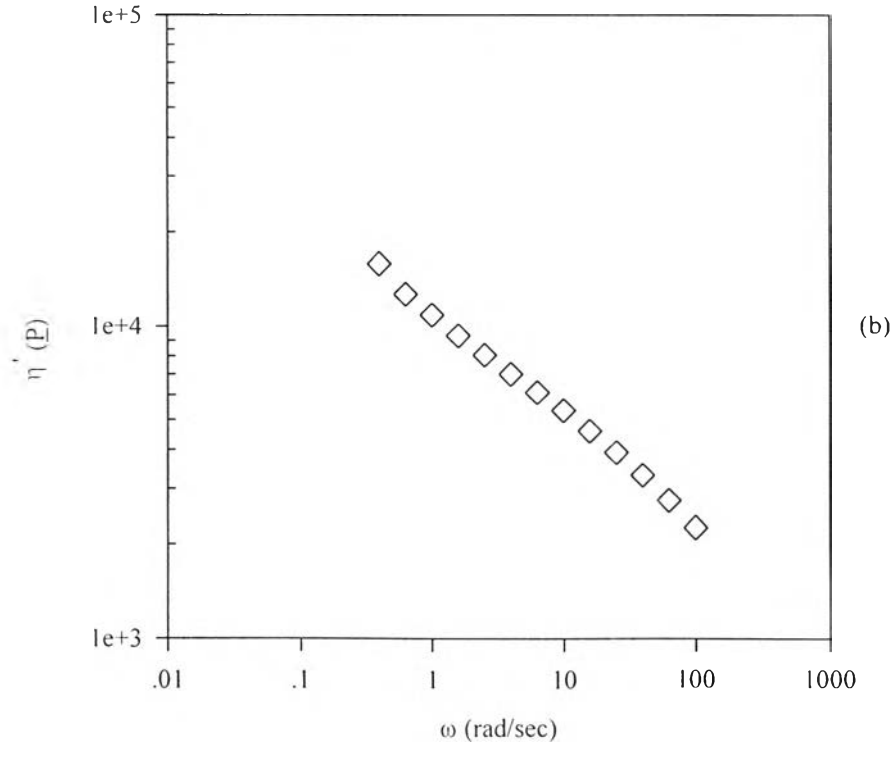


Figure A12 LLDPE (L2009F) at 190 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.



(a)

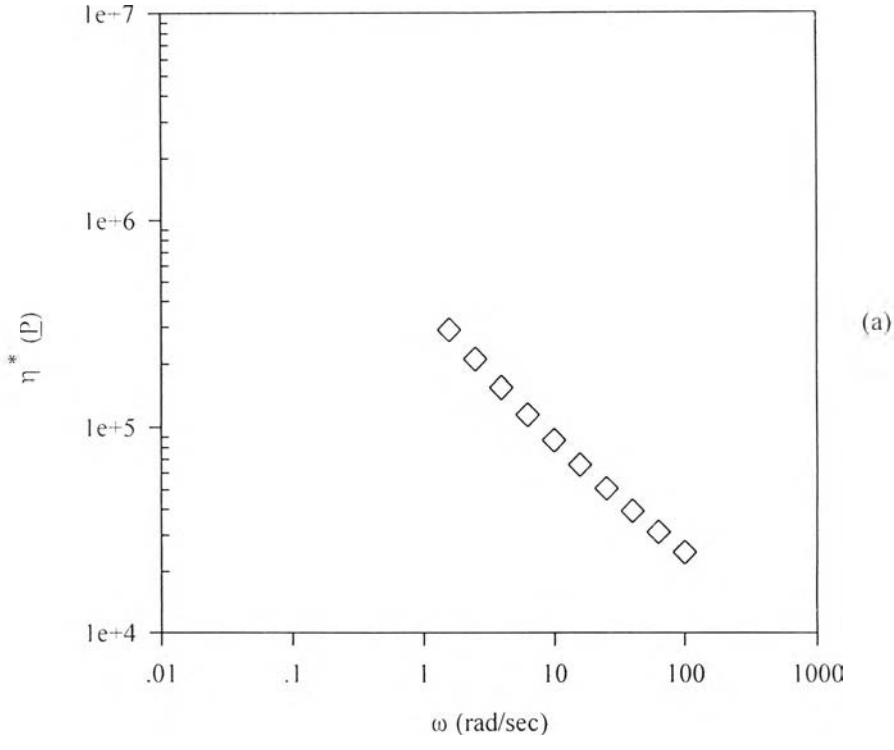
* Cannot be determined accurately from extrabolation.



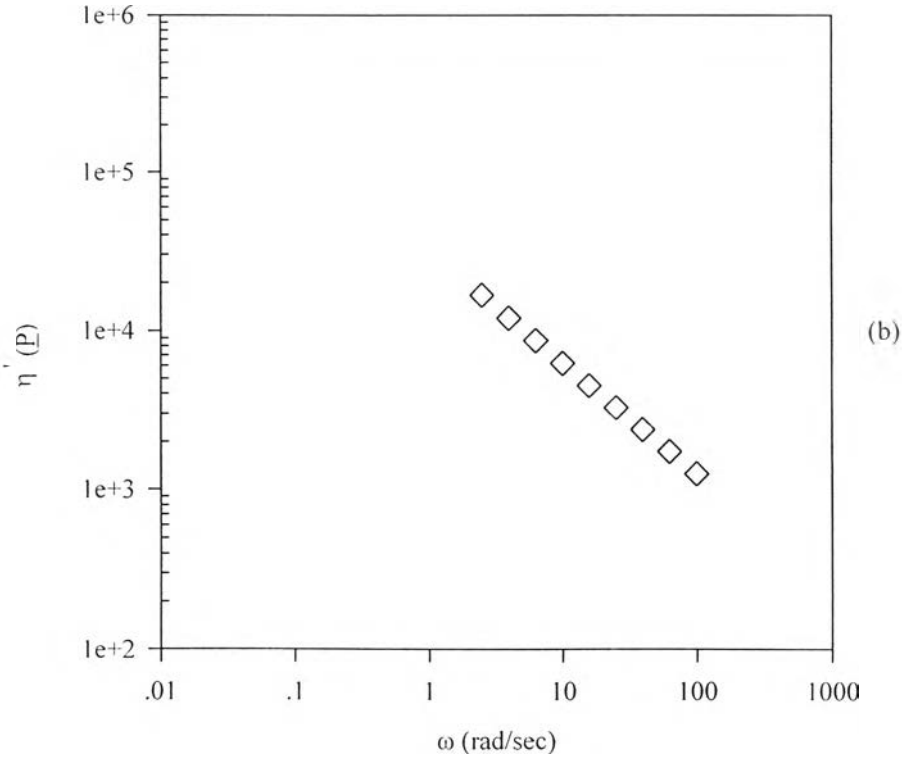
(b)

* Cannot be determined accurately from extrabolation.

Figure A13 MDPE (M3204RU) at 190 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.



* Cannot be determined accurately from extrabolation.



* Cannot be determined accurately from extrabolation.

Figure A14 HDPE (N3260) at 190 ^{o}C: a) η^{*}_{0} vs. ω; b) η'_{0} vs. ω.

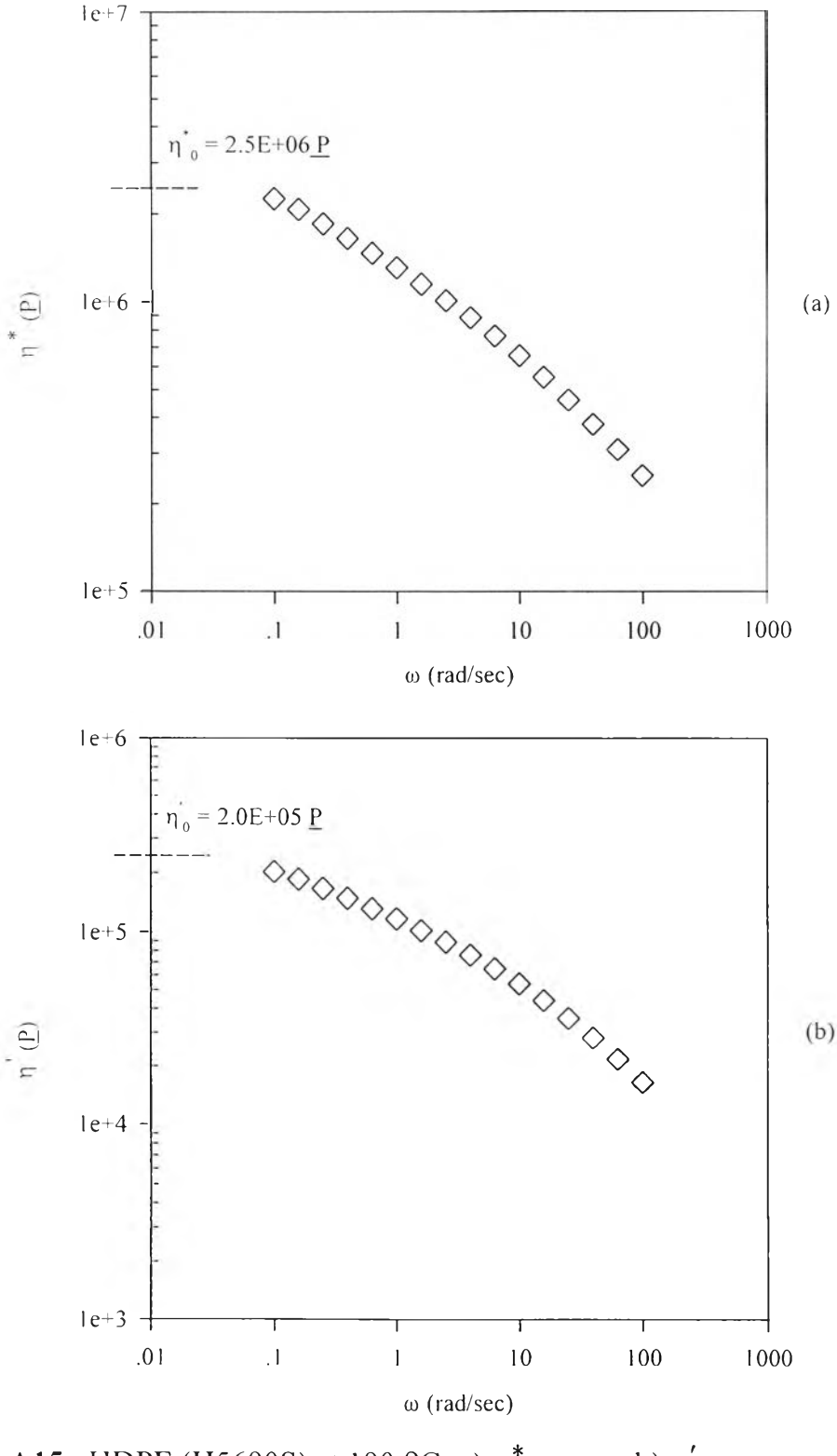
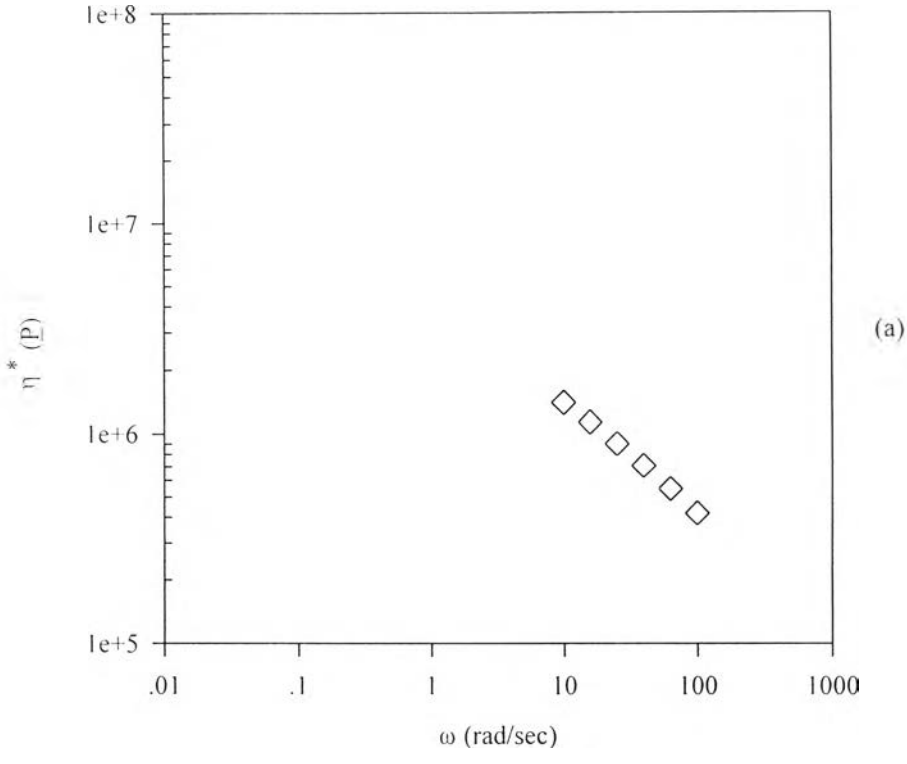
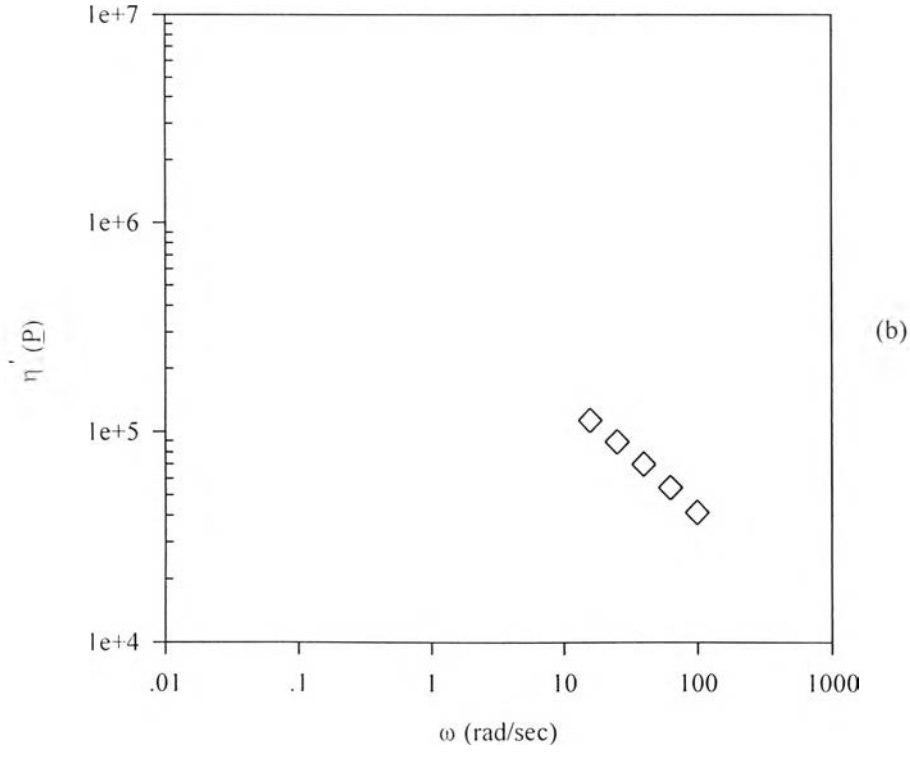


Figure A15 HDPE (H5690S) at 190 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.

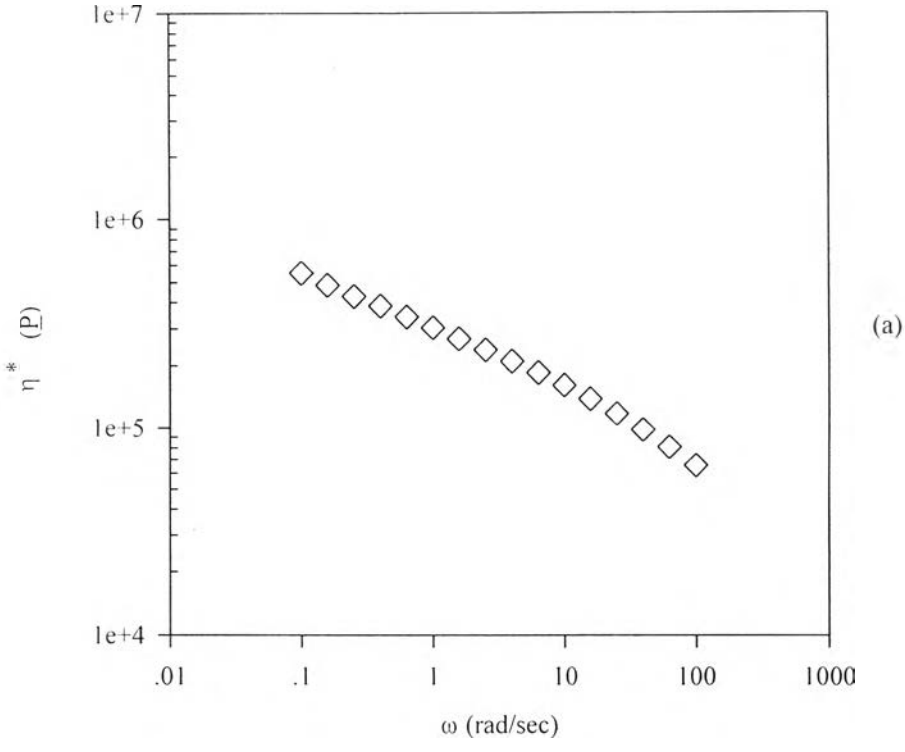


* Cannot be determined accurately from extrabolation.



* Cannot be determined accurately from extrabolation.

Figure A16 HDPE (R1760) at 190 ^{o}C: a) η^{*}_{0} vs. ω; b) η'_{0} vs. ω.



* Cannot be determined accurately from extrabolation.

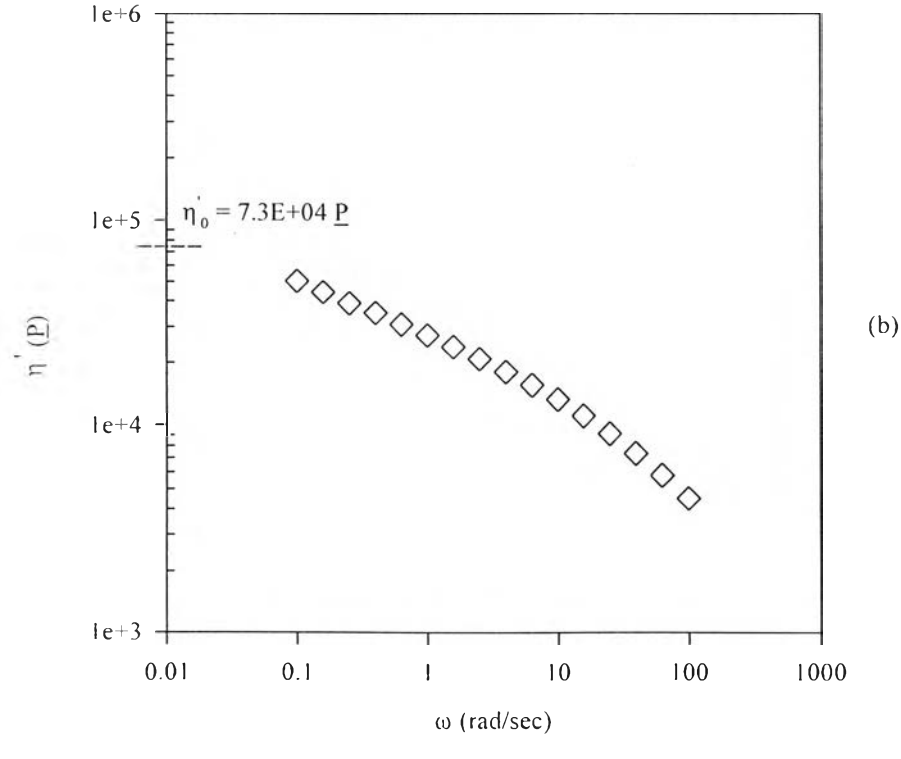


Figure A17 LLDPE (L2020F) at 160 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.

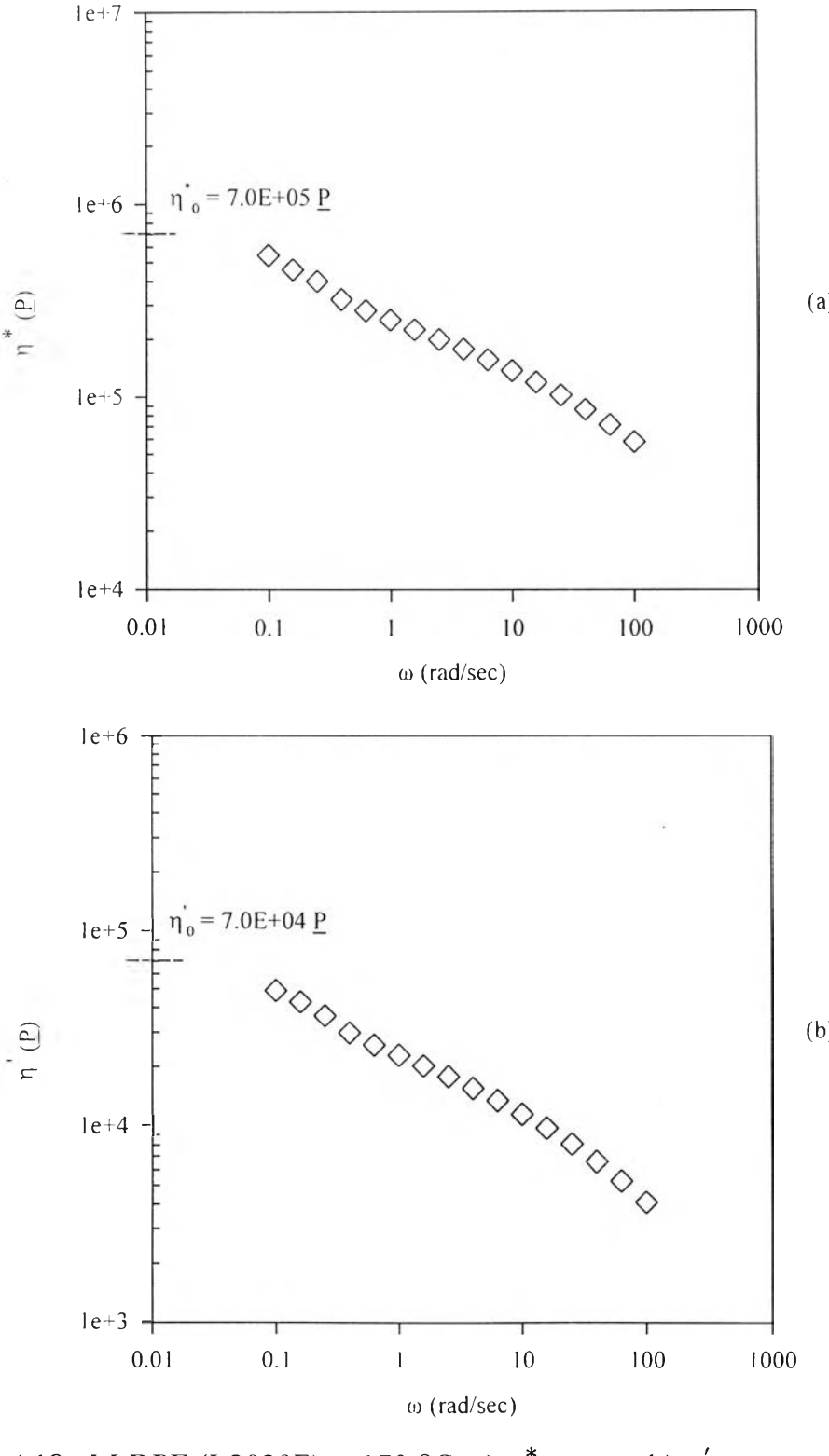


Figure A18 LLDPE (L2020F) at 170 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.

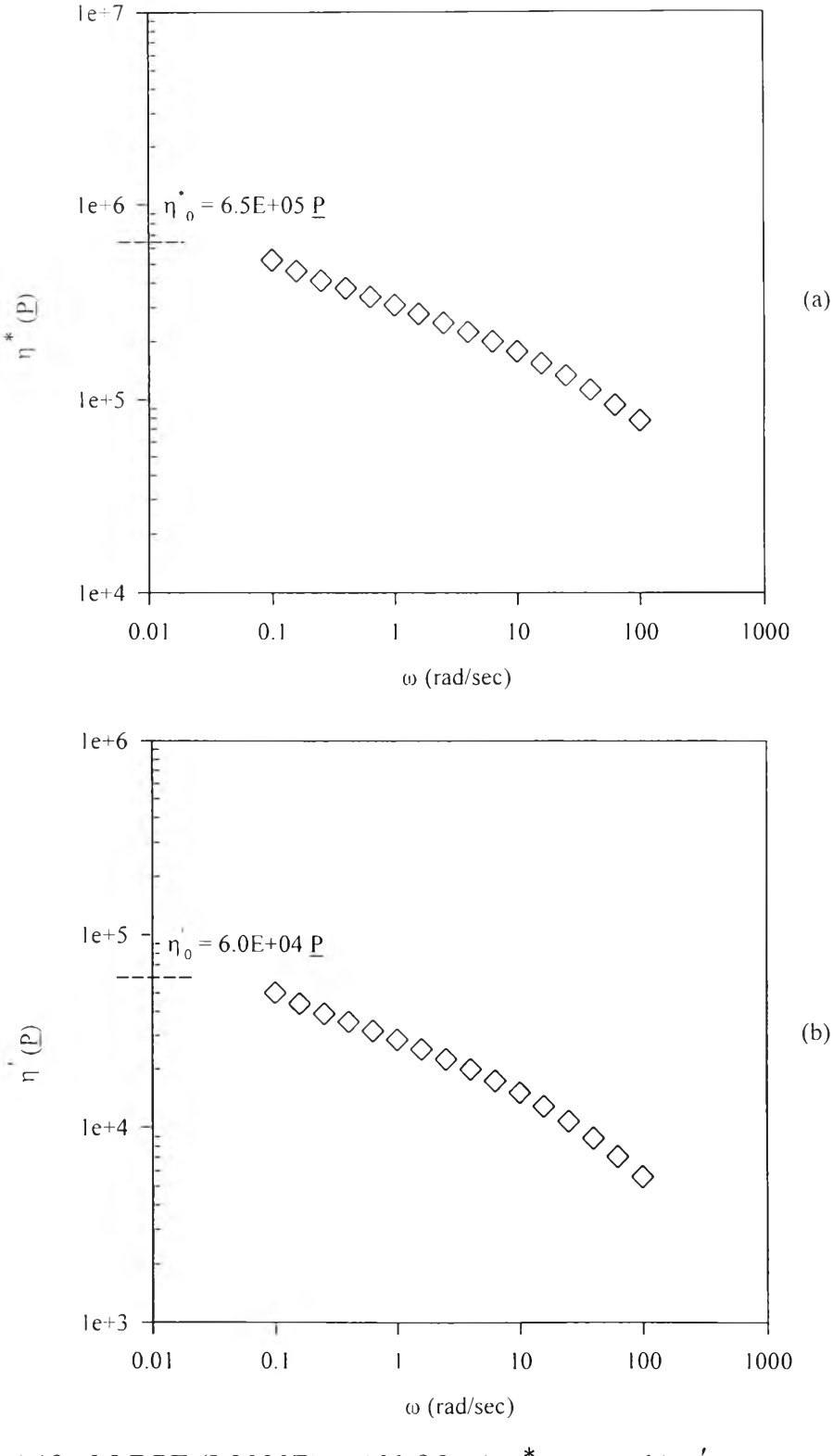
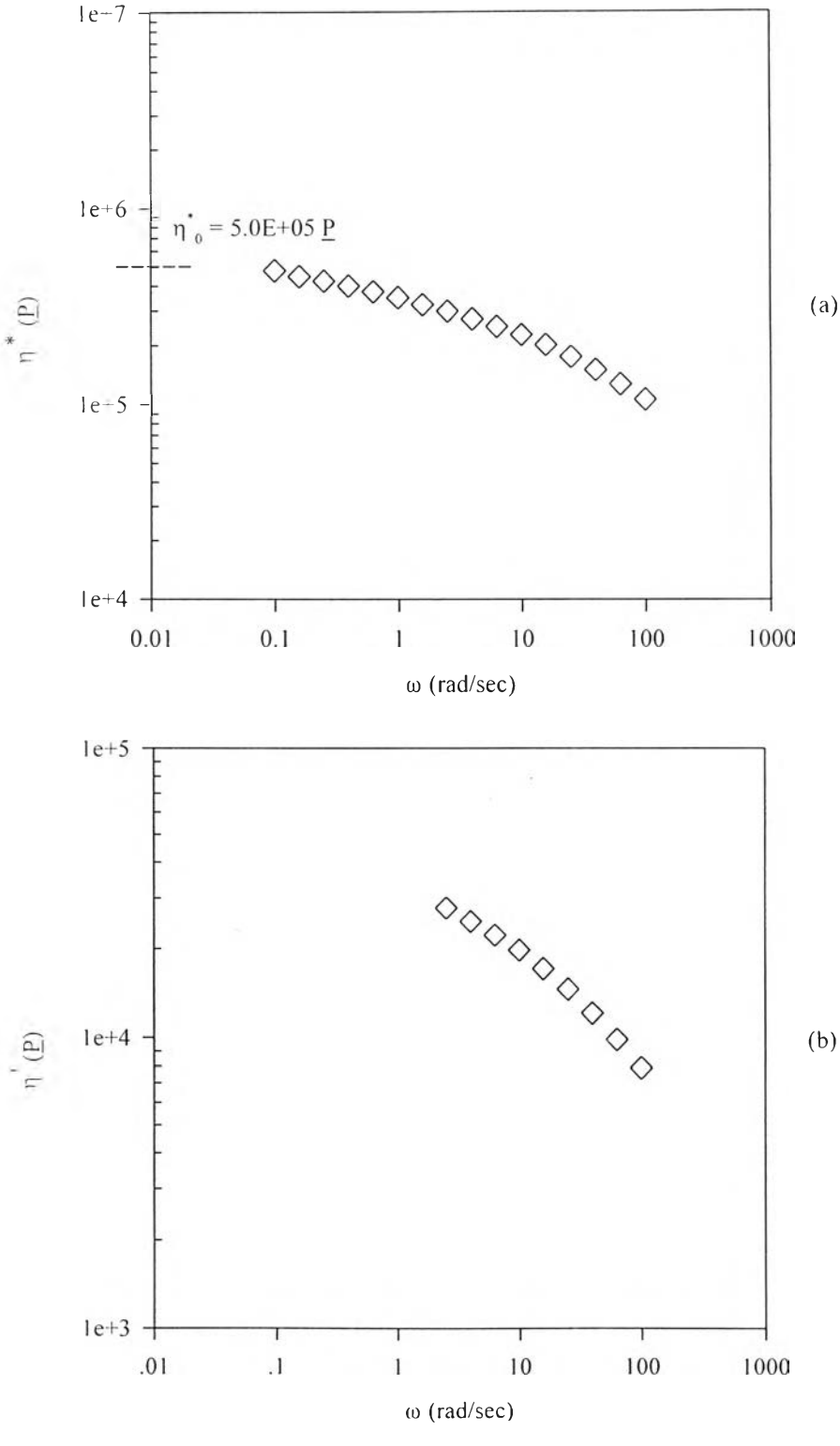


Figure A19 LLDPE (L2020F) at 180 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.



* Cannot be determined accurately from extrabolation.

Figure A20 LLDPE (L2020F) at 200 ^{o}C: a) η^{*}_{0} vs. ω; b) η'_{0} vs. ω.

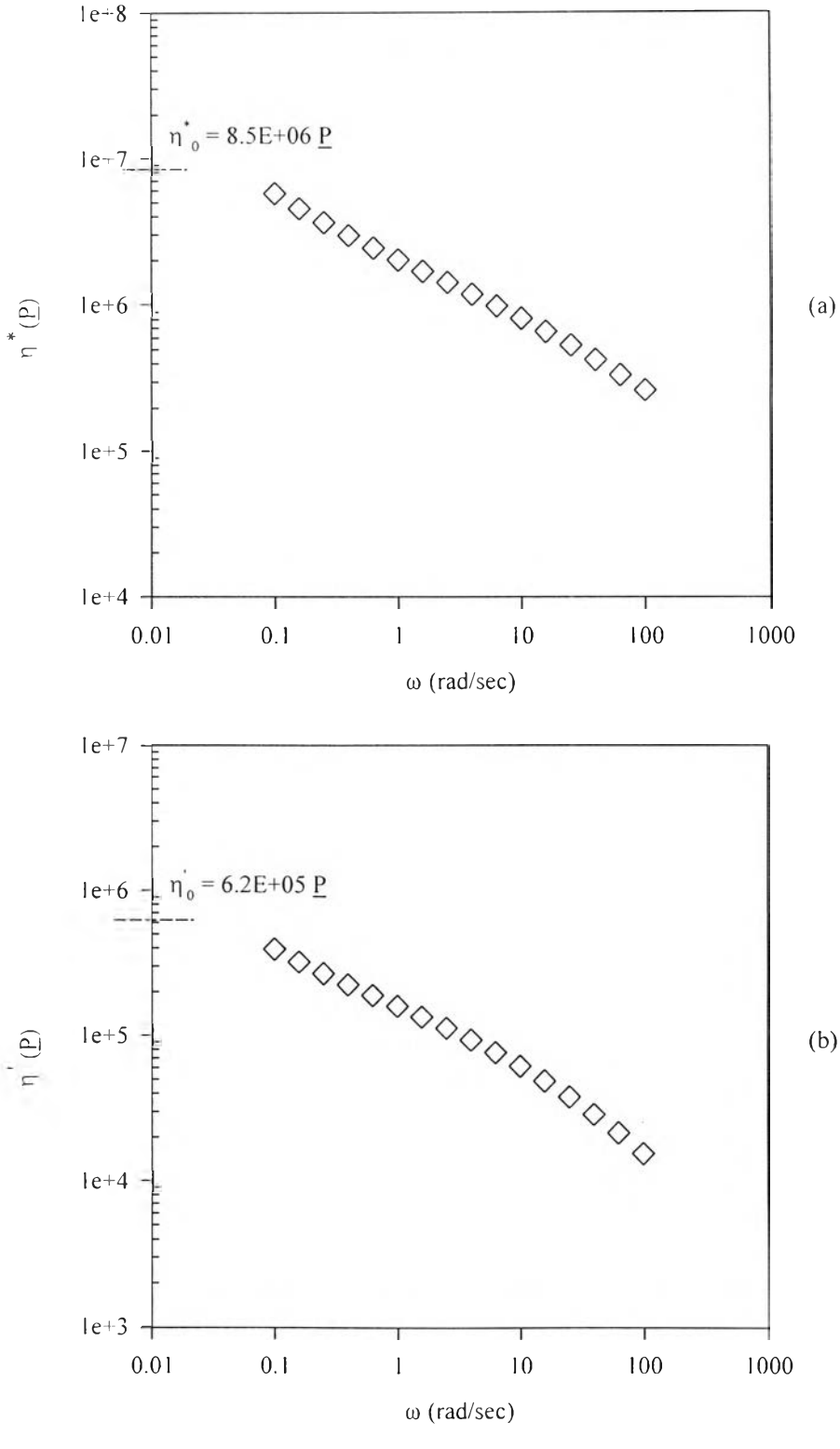


Figure A21 HDPE (H5690S) at 150 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.

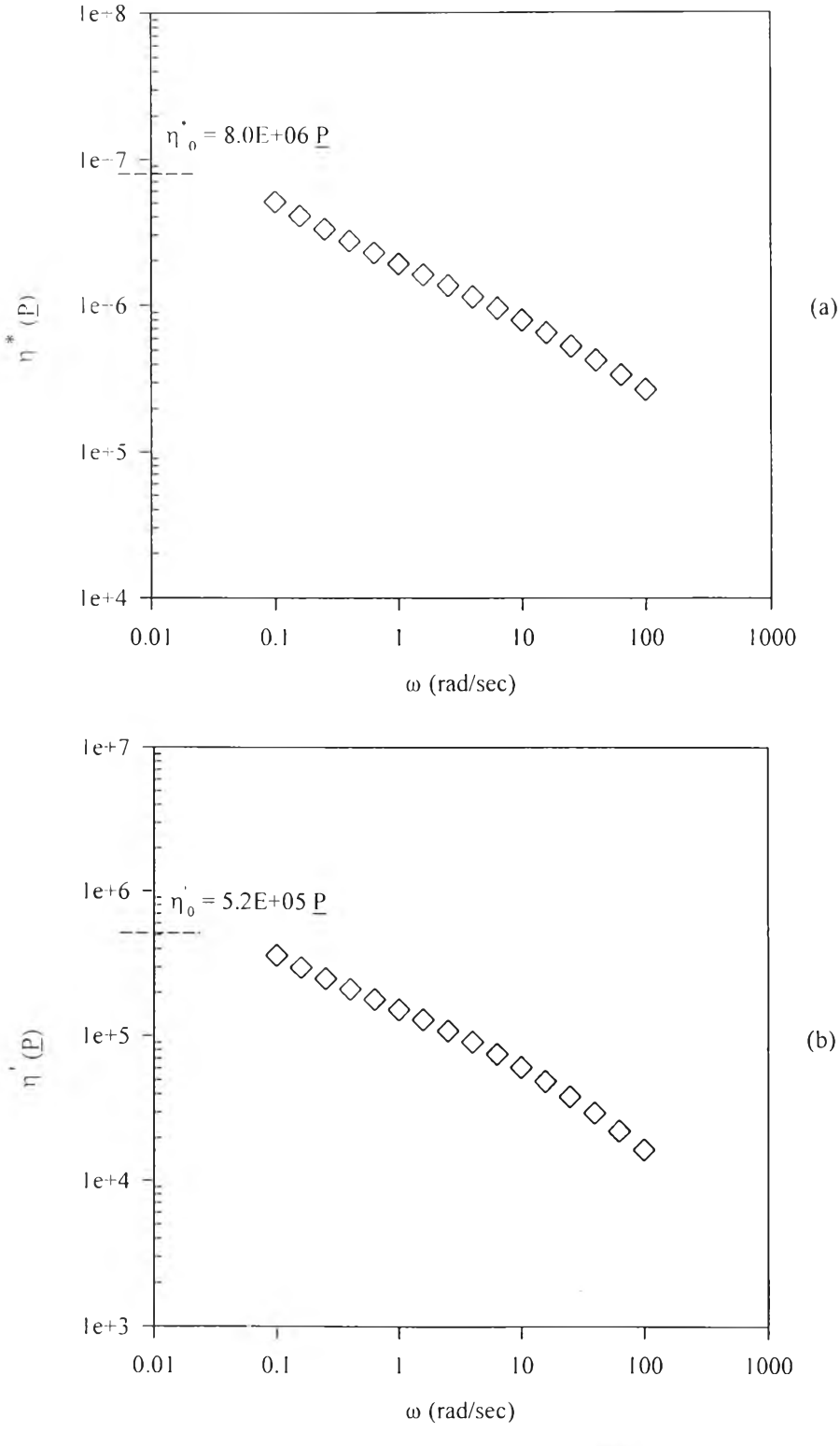


Figure A22 HDPE (H5690S) at 160 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.

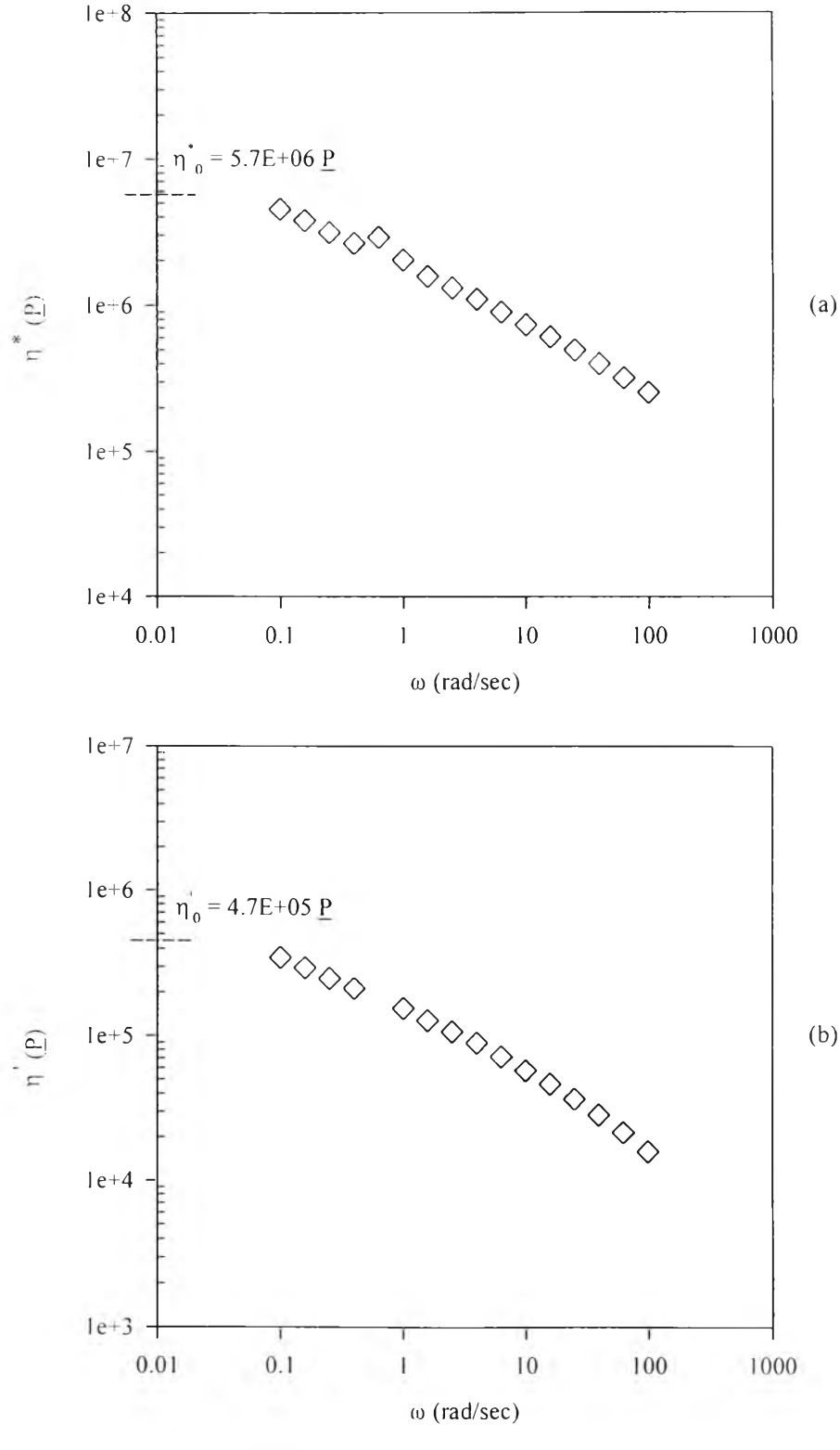


Figure A23 HDPE (H5690S) at 170 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.

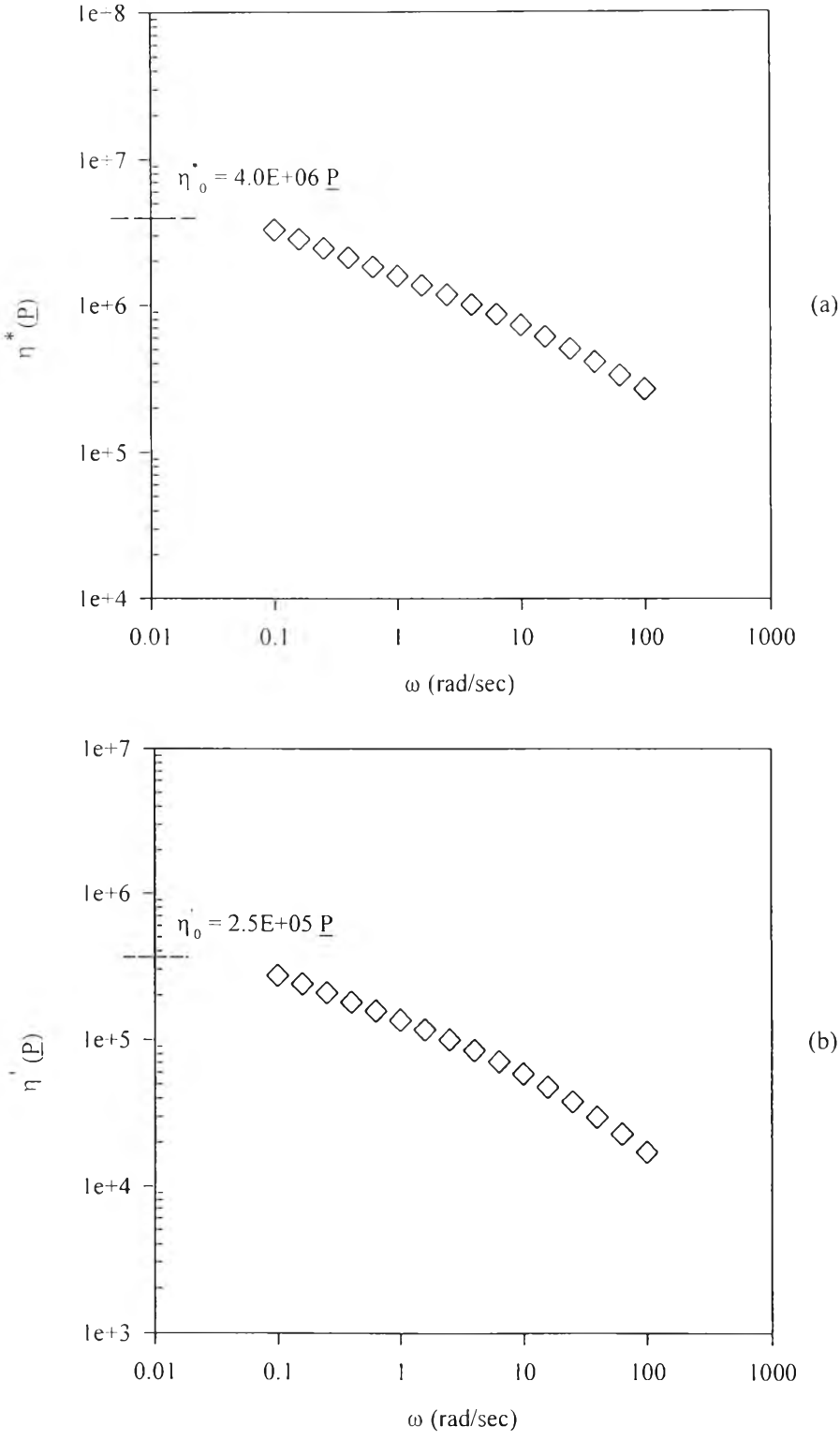


Figure A24 HDPE (H5690S) at 180 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.

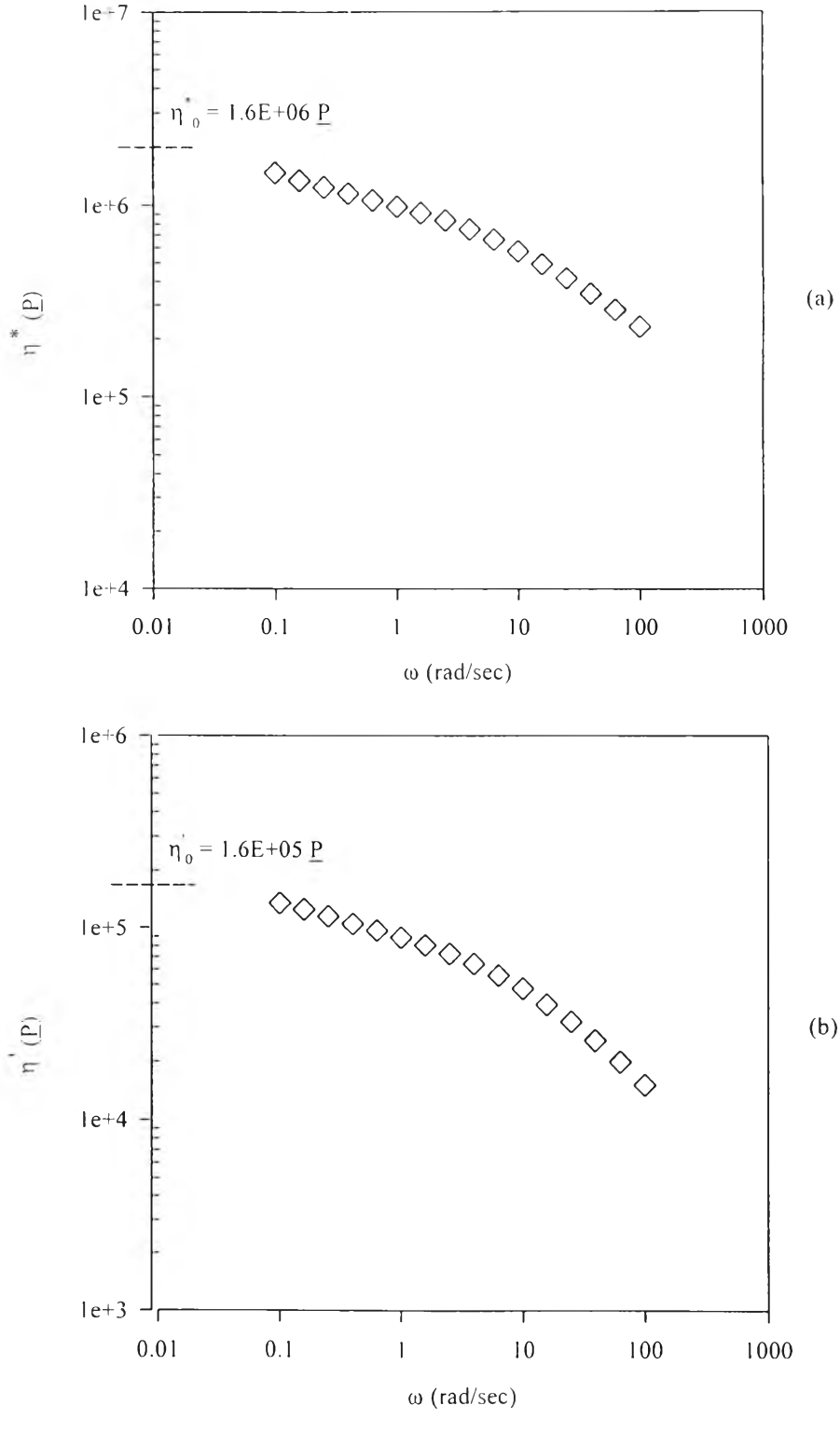


Figure A25 HDPE (H5690S) at 200 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω.

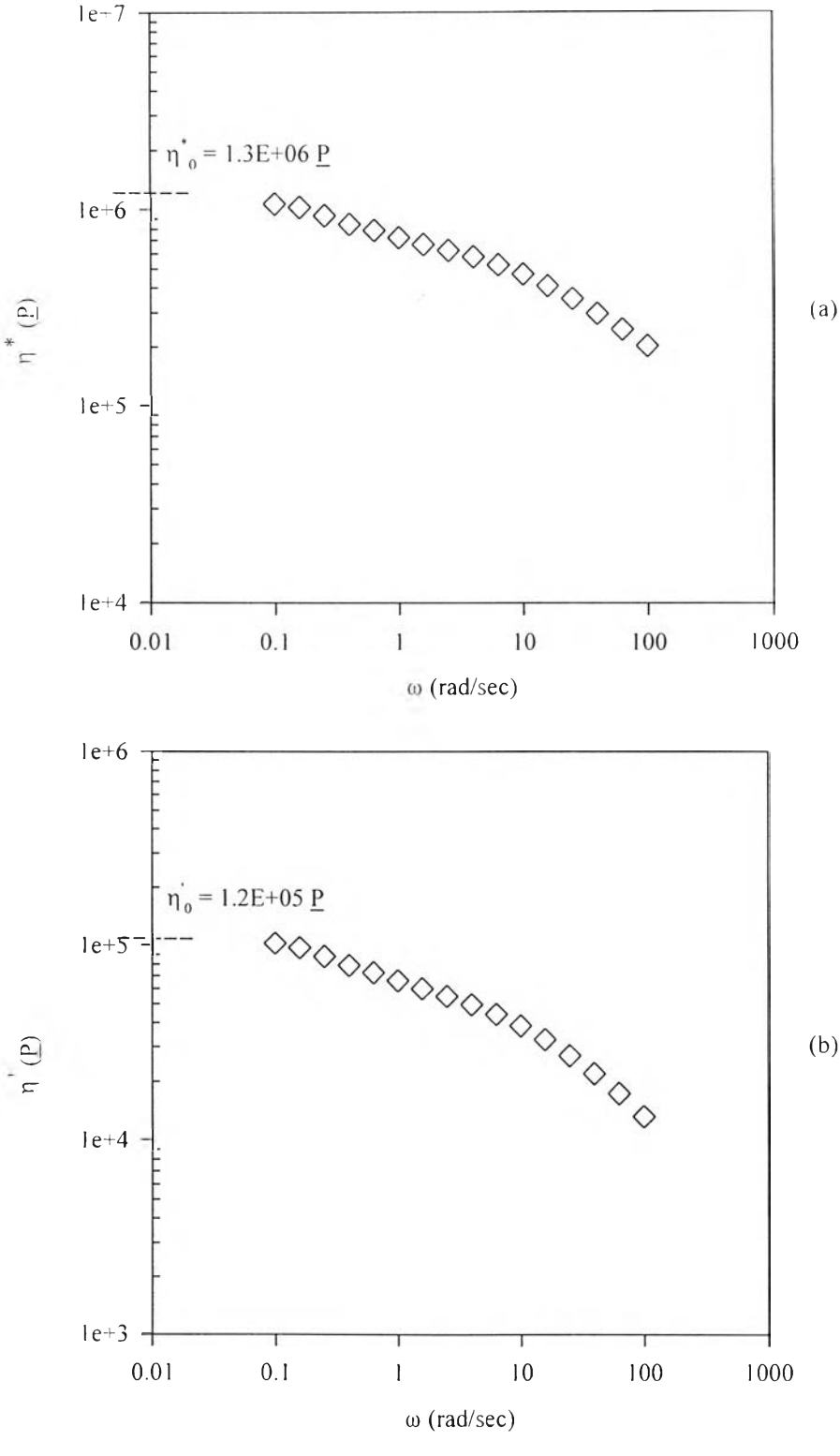


Figure A26 HDPE (H5690S) at 210 °C: a) η^*_0 vs. ω; b) η'_0 vs. ω

23. Data of sharkskin wavelength (λ_s), the sharkskin amplitude (ε_s) and the apparent strain rate (γ_a) in the regime II of LLDPE (L2009F) ;
l_c = 22.5 mm and d_c = 0.7645 mm at 190 °C

γ_a	τ_w	Raw data of sharkskin amplitude			ε_s (μm)		Raw data of sharkskin wavelength			λ_s (μm)	
(1/sec)	(dynes/cm^2)	ε_{s1}	ε_{s2}	ε_{s3}	avg.	SD	λ_{s1}	λ_{s2}	λ_{s3}	avg.	SD
265	2.41E+06	25.7	28.0	30.0	27.9	2.15	137	128	132	132	4.51
325	3.14E+06	28.1	25.7	30.0	27.9	2.15	137	128	132	132	4.51
379	3.51E+06	35.3	29.8	23.4	29.5	5.96	135	157	119	137	19.1
460	3.70E+06	31.9	35.7	37.4	35.0	2.82	160	164	167	164	3.51
514	3.79E+06	31.9	35.7	38.3	35.3	3.22	164	160	167	164	3.51
568	3.82E+06	43.7	43.7	44.6	44.0	0.52	163	130	160	151	18.2
596	3.86E+06	47.4	50.3	52.9	50.2	2.90	194	200	169	188	16.4
812	3.92E+06	48.2	52.9	53.5	51.5	2.90	198	196	200	198	2.00

24. Data of sharkskin wavelength (λ_s), the sharkskin amplitude (ε_s) and the apparent strain rate (γ_a) in the regime II of LLDPE (L2020F) ;
l_c = 22.5 mm and d_c = 0.7645 mm at 190 °C

γ_a	τ_w	Raw data of sharkskin amplitude			ε_s (μm)		Raw data of sharkskin wavelength			λ_s (μm)	
(1/sec)	(dynes/cm^2)	ε_{s1}	ε_{s2}	ε_{s3}	avg.	SD	λ_{s1}	λ_{s2}	λ_{s3}	avg.	SD
352	2.53E+06	27.2	26.3	25.4	26.3	0.90	129	121	122	124	4.36
406	2.70E+06	29.2	29.7	25.4	28.1	2.35	131	145	116	131	14.5
541	3.04E+06	28.6	28.6	27.1	28.1	0.87	141	129	163	144	17.2
623	3.19E+06	28.4	29.7	27.5	28.5	1.11	149	127	164	147	18.6
677	3.24E+06	33.0	30.1	29.2	30.8	1.99	145	148	148	147	1.73
1080	3.46E+06	30.2	32.9	34.9	32.7	2.36	143	147	152	147	4.51
1620	4.00E+06	35.5	35.50	35.1	35.4	0.23	155	160	161	159	3.21
1705	4.04E+06	60.7	59.2	53.7	57.9	3.01	185	192	171	183	10.7

25. Data of sharkskin wavelength (λ_s), the sharkskin amplitude (ε_s) and the apparent strain rate ($\dot{\gamma}_a$) in the regime II of MDPE (M3204RU) ;
l_c = 22.5 mm and d_c = 0.7645 mm at 190 °C

$\dot{\gamma}_a$	τ_w	Raw data of sharkskin amplitude			ε_s (μm)		Raw data of sharkskin wavelength			λ_s (μm)	
(1/sec)	(dynes/cm^2)	ε_{s1}	ε_{s2}	ε_{s3}	avg.	SD	λ_{s1}	λ_{s2}	λ_{s3}	avg.	SD
812	2.75E+06	25.7	28.0	30.0	27.9	2.15	122	121	121	121	0.58
1000	2.98E+06	28.1	25.7	30.0	27.9	2.15	126	117	120	121	4.58
1160	3.11E+06	35.3	29.8	23.4	29.5	5.96	120	135	112	122	11.7
1270	3.24E+06	31.9	35.7	37.4	35.0	2.82	185	126	142	151	30.5
1350	3.30E+06	31.9	35.7	38.3	35.3	3.22	183	120	157	153	31.7
1430	3.33E+06	43.7	43.7	44.6	44.0	0.52	130	160	156	149	16.3
1540	3.45E+06	47.4	50.3	52.9	50.2	2.90	209	208	196	204	7.23
1620	3.52E+06	48.2	52.9	53.5	51.5	2.90	209	209	228	215	11.0

26. Data of sharkskin wavelength (λ_s), the sharkskin amplitude (ε_s) and the apparent strain rate (γ'_a) in the regime II of HDPE (N3260) ;

l_c = 22.5 mm and d_c = 0.7645 mm at 190 °C

γ'_a	τ_w	Raw data of sharkskin amplitude			ε_s (μm)		Raw data of sharkskin wavelength			λ_s (μm)	
(1/sec)	(dynes/cm^2)	ε_{s1}	ε_{s2}	ε_{s3}	avg.	SD	λ_{s1}	λ_{s2}	λ_{s3}	avg.	SD
81	1.91E+06	52.0	54.0	52.0	52.7	1.15	212	201	212	208	6.35
122	2.29E+06	56.7	58.5	50.3	55.2	4.31	213	212	213	213	0.58
162	2.58E+06	62.0	60.0	65.5	62.5	2.78	253	260	270	261	8.54
230	2.96E+06	72.2	78.4	73.1	74.6	3.35	262	288	290	280	15.6
257	3.05E+06	111	102	101	105	5.51	354	337	331	341	11.9
298	3.17E+06	112	97.7	132	114	17.23	365	360	375	367	7.64
338	3.29E+06	105	98.3	103	102	3.44	410	422	413	415	6.24
406	3.46E+06	110	121	131	121	8.58	421	433	422	425	6.66

27. Data of sharkskin wavelength (λ_s), the sharkskin amplitude (ε_s) and the apparent strain rate (γ_a) in the regime II of HDPE (H5690S) ;

l_c = 22.5 mm and d_c = 0.7645 mm at 190 °C

γ_a	τ_w	Raw data of sharkskin amplitude			ε_s (μm)		Raw data of sharkskin wavelength			λ_s (μm)	
(1/sec)	(dynes/cm^2)	ε_{s1}	ε_{s2}	ε_{s3}	avg.	SD	λ_{s1}	λ_{s2}	λ_{s3}	avg.	SD
81	1.91E+05	45.8	50.1	54.8	50.2	4.50	213	201	194	203	9.61
122	2.29E+05	56.7	58.5	50.3	55.2	4.31	214	239	213	222	14.7
162	2.58E+05	62.0	55.0	65.5	60.8	5.35	253	287	275	272	17.2
230	2.96E+05	63.8	78.4	73.1	71.8	7.39	261	278	290	276	14.6
257	3.05E+05	91.2	102	101	98.1	5.97	354	337	329	340	12.8
298	3.17E+05	101	97.7	95.9	98.2	2.59	370	360	365	365	5.00
338	3.29E+05	105	98.3	103	102.1	3.44	408	406	413	409	3.61
406	3.46E+05	106	102	108	105.3	2.49	420	427	423	423	3.51

28. Data of sharkskin wavelength (λ_s), the sharkskin amplitude (ε_s) and the apparent strain rate ($\dot{\gamma}_a$) in the regime II of HDPE (R1760) ;
l_c = 22.5 mm and d_c = 0.7645 mm at 190 °C

$\dot{\gamma}_a$	τ_w	Raw data of sharkskin amplitude			ε_s (μm)		Raw data of sharkskin wavelength			λ_s (μm)	
(1/sec)	(dynes/cm^2)	ε_{s1}	ε_{s2}	ε_{s3}	avg.	SD	λ_{s1}	λ_{s2}	λ_{s3}	avg.	SD
81	1.91E+06	45.8	46	54.8	48.9	5.14	190	192	194	192	2.00
122	2.29E+06	52.0	52.0	48.0	50.7	2.31	214	222	210	215	6.11
162	2.58E+06	61.0	55.0	65.5	60.5	5.27	253	264	275	264	11.0
230	2.96E+06	63.8	75	70	69.6	5.61	261	278	283	274	11.5
257	3.05E+06	100	111	121	111	10.5	354	332	312	333	21.0
298	3.17E+06	101	98.0	95.3	98.1	2.85	370	343	365	359	14.4
338	3.29E+06	105	111.0	112	109	3.79	412	406	411	412	3.21
406	3.46E+06	115	121	132	123	7.04	420	423	420	421	1.73

APPENDIX B

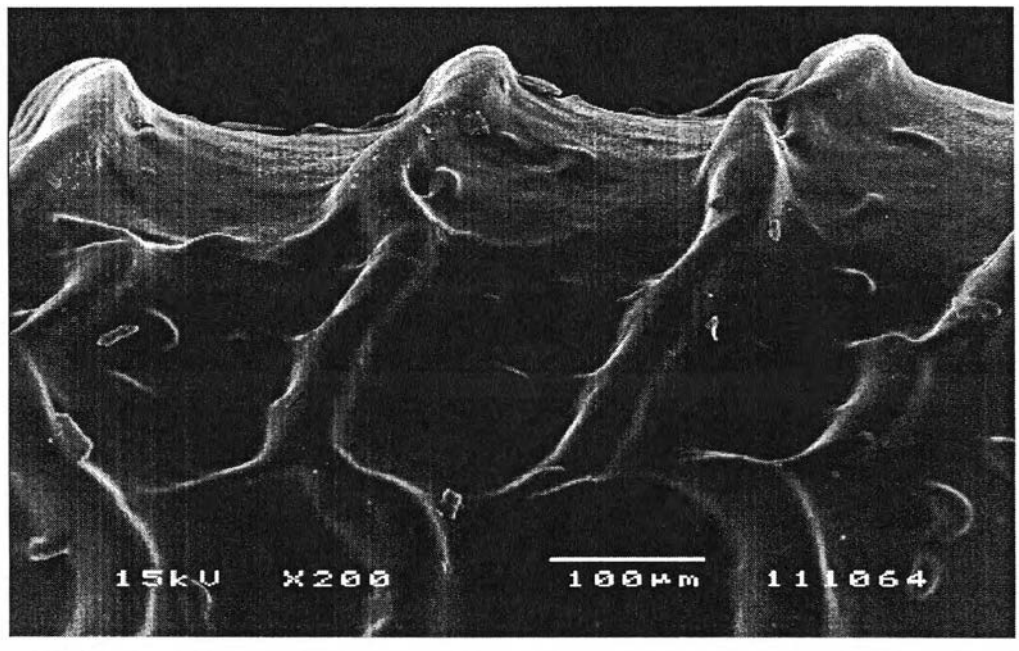


Figure B1 Sharkskin extrudate of HDPE (N3260) of regime II at 190 °C (200× magnification)

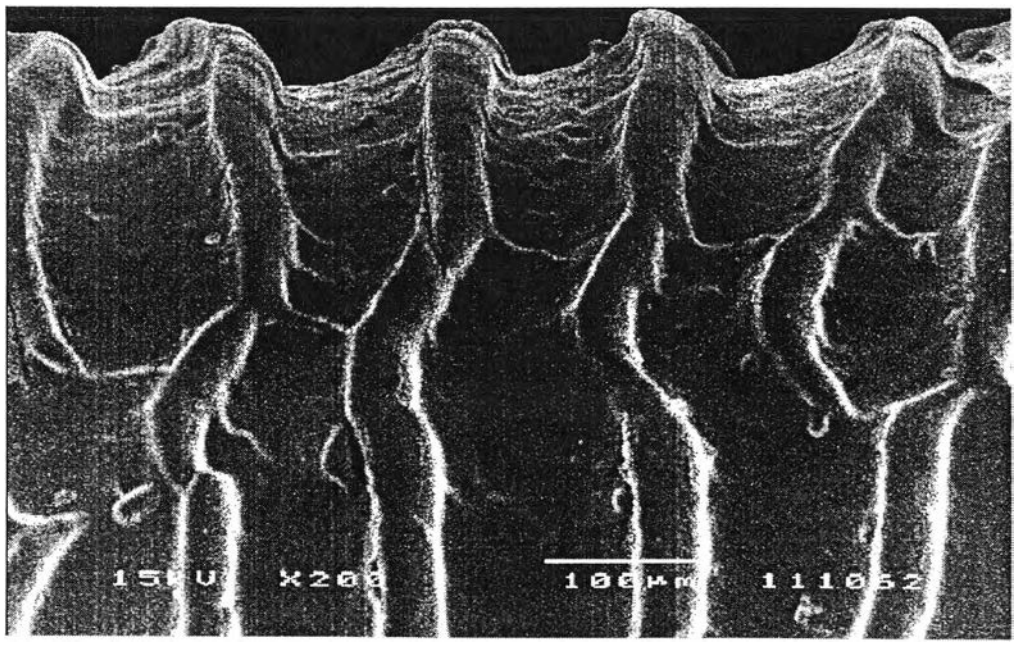


Figure B2 Sharkskin extrudate of HDPE (H5690S) regime II at 190 °C (200× magnification)

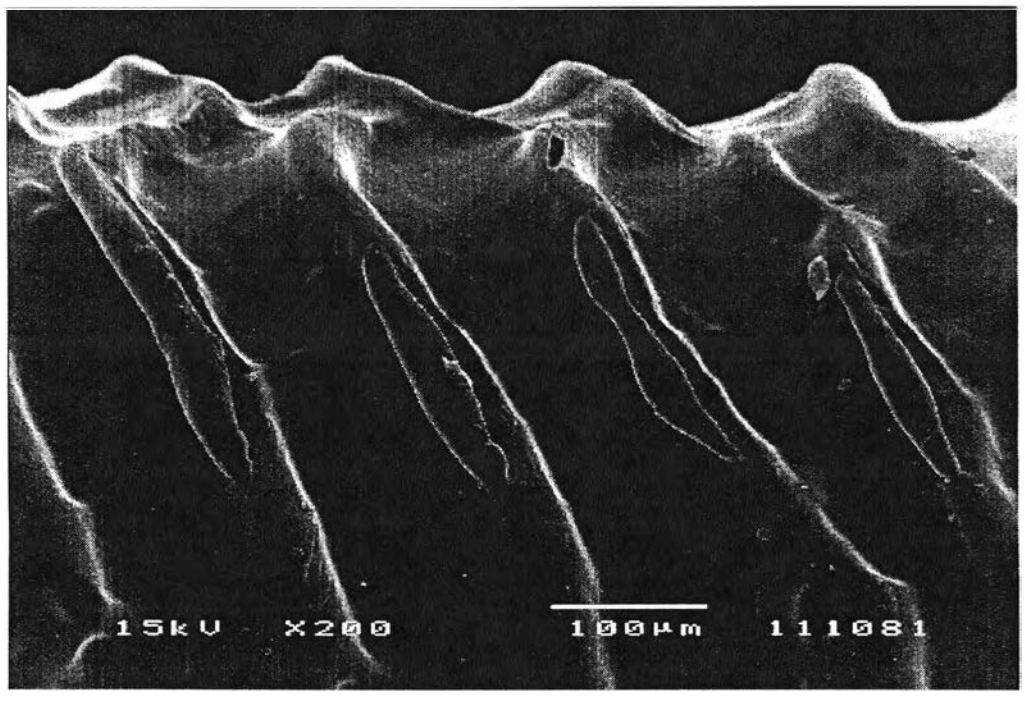


Figure B3 Sharkskin extrudate of HDPE (R1760) regime II at 190 ^{o}C (200× magnification)

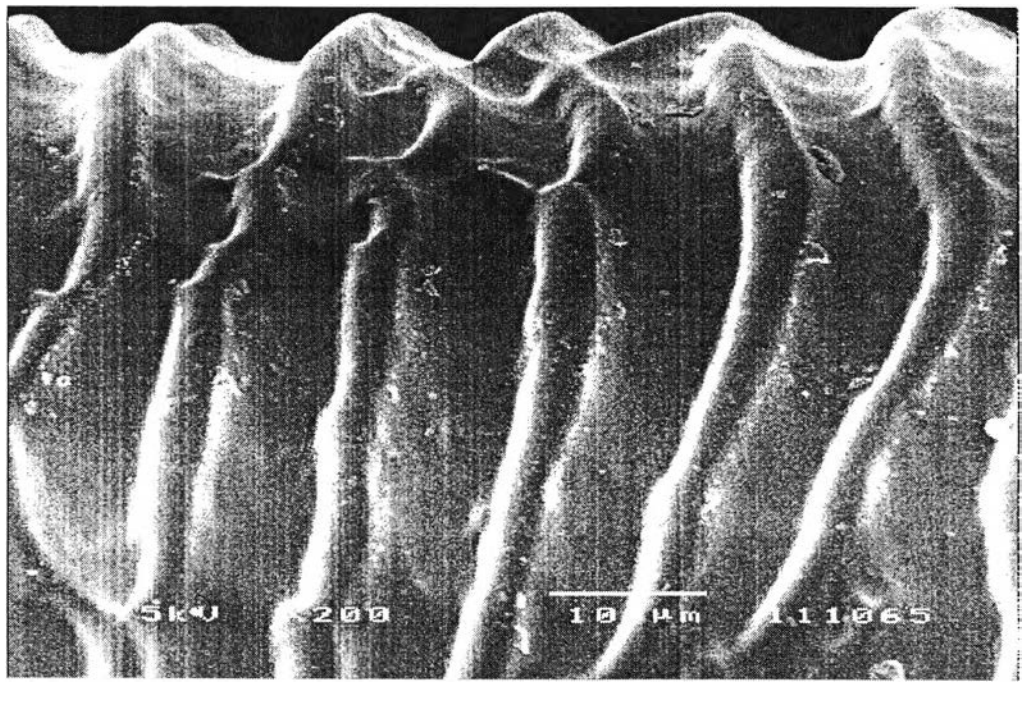


Figure B4 Sharkskin extrudate of LLDPE (L2009F) regime II at 190 ^{o}C (200× magnification)

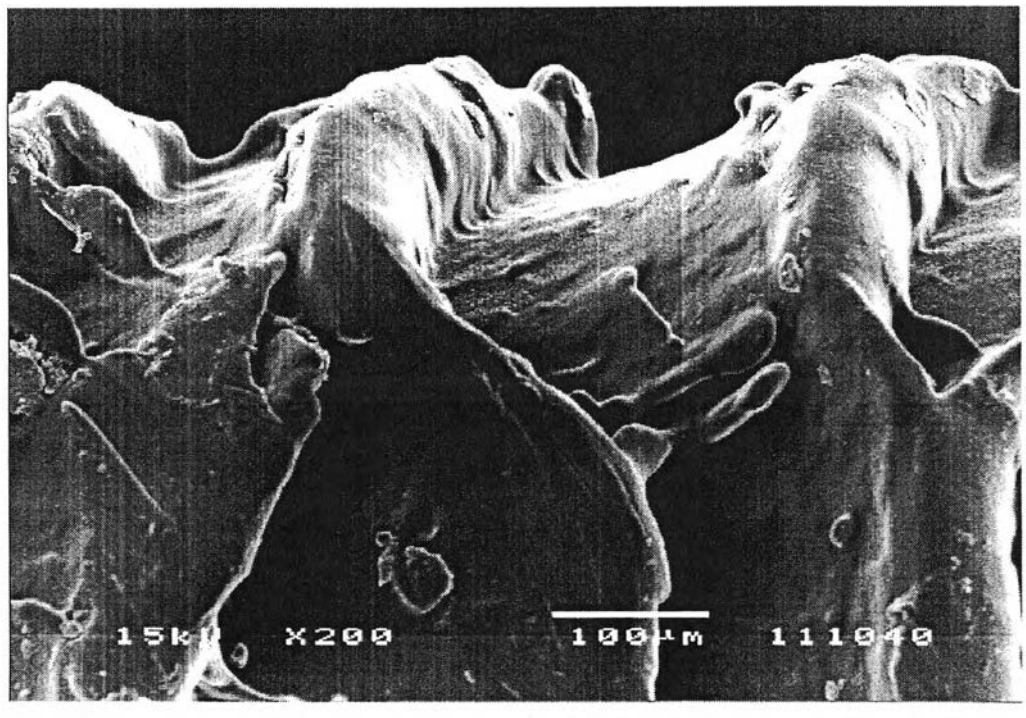


Figure B5 Sharkskin extrudate of LLDPE (L2020F) regime II at 190 ^{o}C (200× magnification)

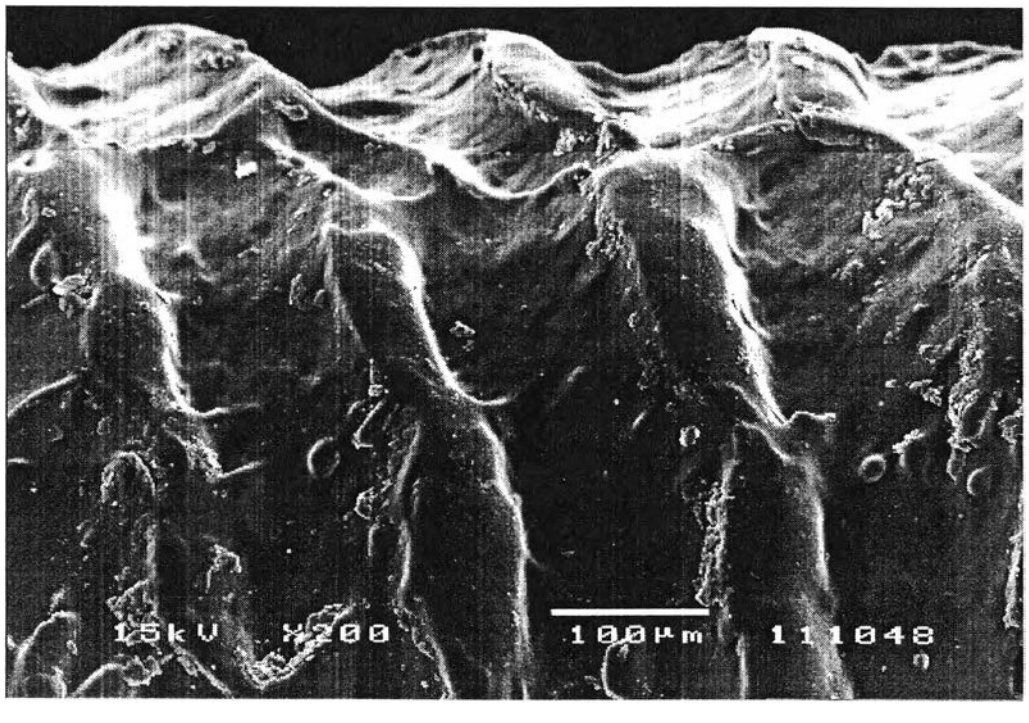


Figure B6 Sharkskin extrudate of MDPE (M3204RU) regime II at 190 ^{o}C (200×magnification

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