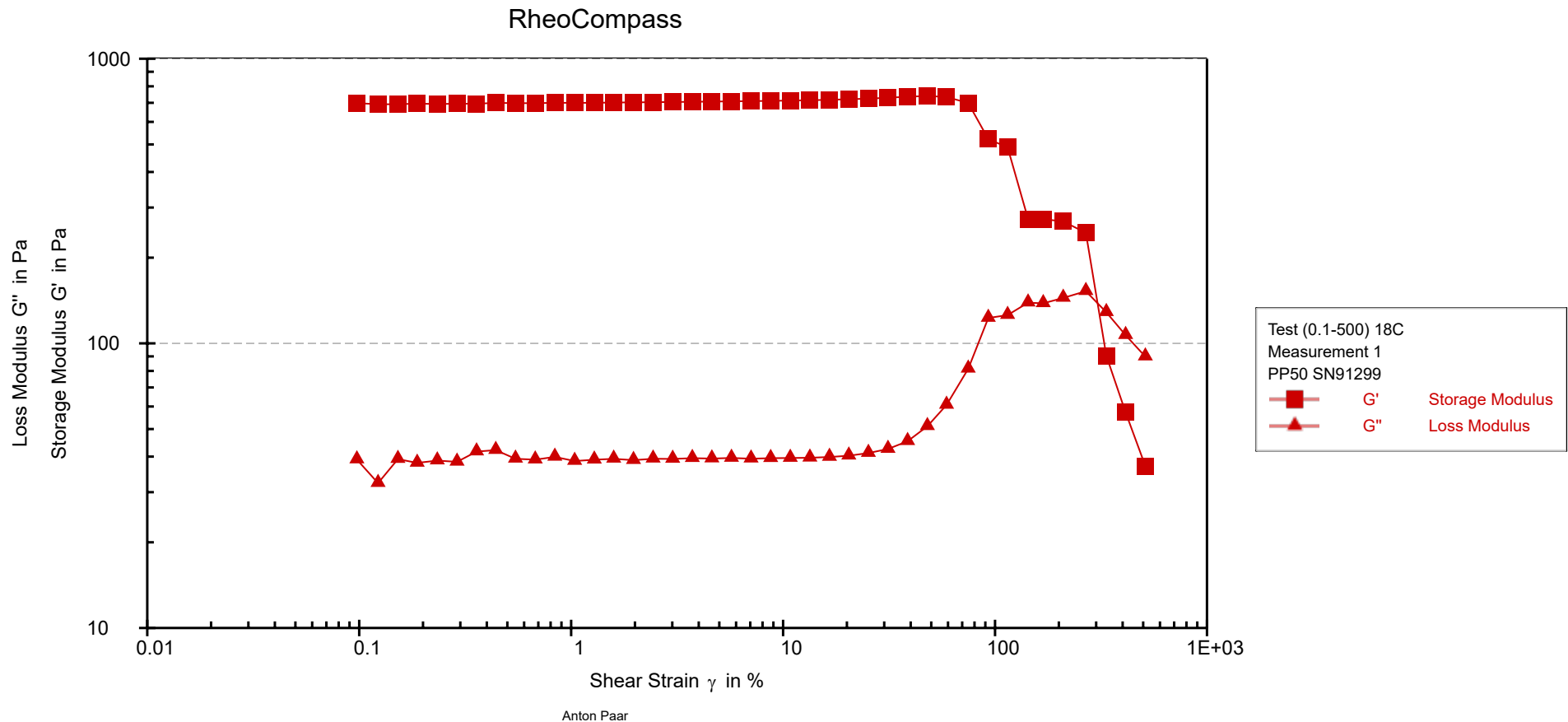


Amplitude Sweep of the ColMa 15% 18 C



Method description:

To measure storage modulus (G') and loss modulus (G'') by varying shear strain from solid to liquid regime. Vary Shear strain (oscillating): 0.01 to 150 % (Ramp Logarithmic). Keep 'frequency' constant at 1 Hz.

Amplitude Sweep of the ColMa 15% 18 C

AS ColSa, Measurement 1, Interval 1

Point No. №	Shear Strain γ [%]	Shear Stress τ [Pa]	Storage Modulus G' [Pa]	Loss Modulus G'' [Pa]	Loss Factor $\tan(\delta)$ [1]	Torque M [mN·m]	Status Stat
1	0.0961	0.066472	66.494	18.984	0.286	0.0024405	
2	0.12	0.098554	79.946	18.534	0.232	0.0036185	
3	0.149	0.15083	98.66	21.368	0.217	0.0055377	
4	0.185	0.21613	114.5	22.787	0.199	0.0079352	
5	0.23	0.30291	129.74	23.696	0.183	0.011122	
6	0.284	0.41177	143.01	25.043	0.175	0.015118	
7	0.352	0.55309	154.84	25.969	0.168	0.020307	
8	0.438	0.73133	165	26.47	0.160	0.026851	
9	0.542	0.95959	174.99	27.281	0.156	0.035232	
10	0.668	1.2477	184.72	27.928	0.151	0.045809	
11	0.83	1.6318	194.39	28.67	0.147	0.059913	
12	1.03	2.1193	203.93	29.382	0.144	0.07781	
13	1.27	2.7436	213.49	30.015	0.141	0.10073	
14	1.58	3.5462	222.85	30.584	0.137	0.1302	
15	1.95	4.5746	232.45	31.496	0.135	0.16796	
16	2.41	5.8896	241.9	32.141	0.133	0.21624	
17	2.99	7.5686	251.21	32.867	0.131	0.27788	
18	3.7	9.7074	260.38	33.542	0.129	0.35641	
19	4.57	12.411	269.21	33.669	0.125	0.45567	
20	5.67	15.893	278.32	34.843	0.125	0.58351	
21	7.01	20.298	287.43	35.431	0.123	0.74523	



Method description:

To measure storage modulus (G') and loss modulus (G'') by varying shear strain from solid to liquid regime. Vary Shear strain (oscillating): 0.01 to 150 % (Ramp Logarithmic). Keep 'frequency' constant at 1 Hz.

Amplitude Sweep of the ColMa 15% 18 C

22	8.68	25.897	296.24	36.072	0.122	0.95081
23	10.7	33.009	305.23	36.747	0.120	1.2119
24	13.3	42.05	314.25	37.343	0.119	1.5439
25	16.4	53.586	323.58	37.985	0.117	1.9674
26	20.3	68.102	333.47	38.586	0.116	2.5004
27	25.1	87.542	346.27	39.293	0.113	3.2141
28	31.1	112.75	360.6	40.095	0.111	4.1396
29	38.4	146.01	377.85	40.953	0.108	5.3609
30	47.4	190.67	399.65	41.906	0.105	7.0004
31	58.2	254.86	435.53	43.809	0.101	9.3573
32	71.9	350.66	485.33	47.019	0.097	12.875
33	88.7	491.81	551.76	57.008	0.103	18.057
34	110	668.04	596.61	101.58	0.170	24.527
35	140	841.52	577.67	166.44	0.288	30.897
36	176	711.47	331.5	233.27	0.704	26.122
37	219	655.55	208.85	214.87	1.029	24.069
38	270	512.81	109.6	154.74	1.412	18.828
39	334	471.87	69.117	123.42	1.786	17.325
40	410	437.36	42.92	97.639	2.275	16.058
41	506	428	27.773	79.853	2.875	15.714

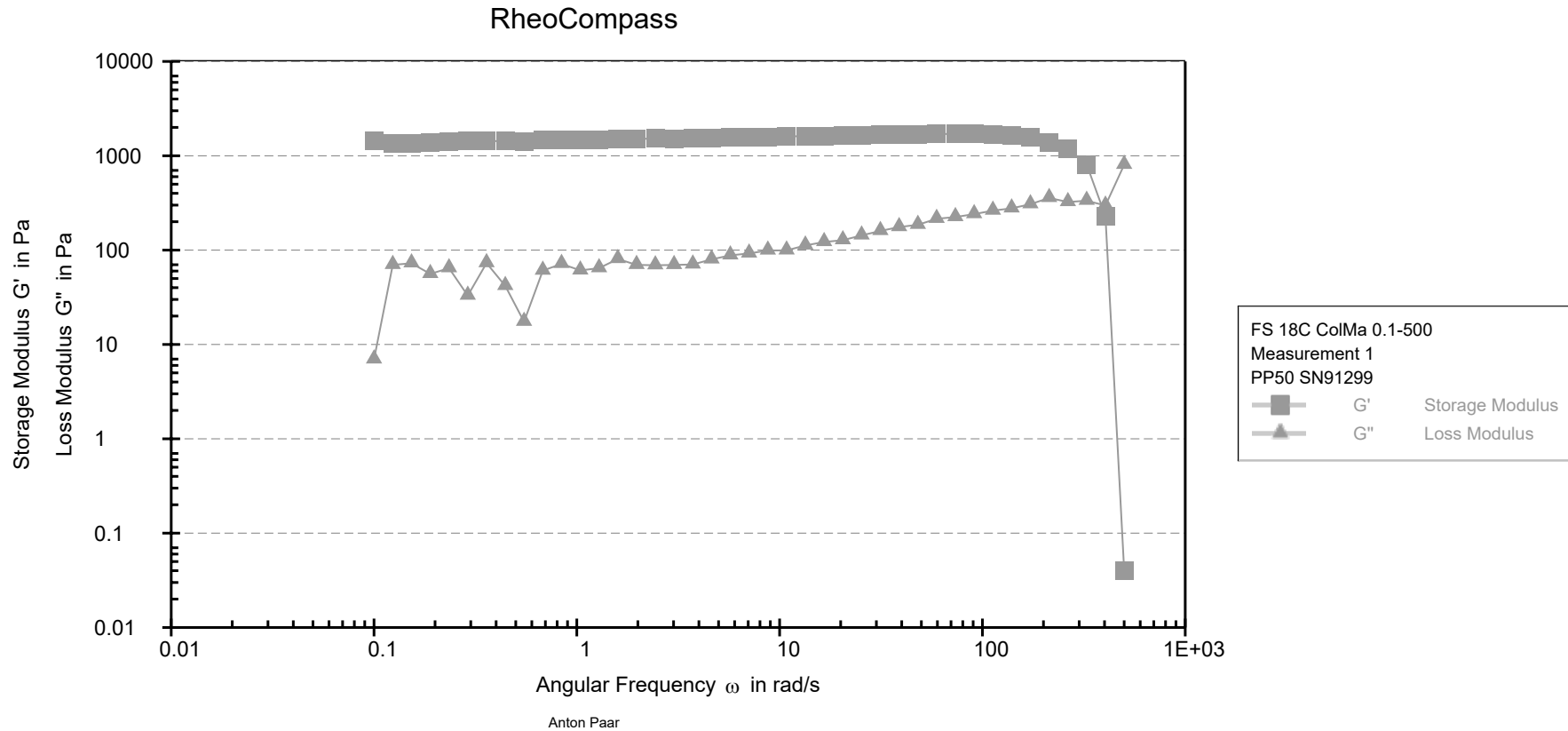
WMa



Method description:

To measure storage modulus (G') and loss modulus (G'') by varying shear strain from solid to liquid regime. Vary Shear strain (oscillating): 0.01 to 150 % (Ramp Logarithmic). Keep 'frequency' constant at 1 Hz.

Frequency sweep of the ColMa 15% 18C



Method description:

To measure G' and G'' by varying angular frequency in linear viscoelastic region. Vary Angular Frequency: 0.1 to 100 rad/s (Ramp Logarithmic). Keep Shear Strain constant at 0.1%

Frequency sweep of the ColMa 15% 18C

FS ColSa, Measurement 1, Interval 1

Point No. №	Angular Frequency ω [rad/s]	Complex Viscosity $ \eta^* $ [Pa·s]	Storage Modulus G' [Pa]	Loss Modulus G'' [Pa]	Loss Factor $\tan(\delta)$ [1]	Shear Strain γ [%]	Shear Stress τ [Pa]	Torque M [mN·m]	Status Stat
1	0.1	3355.6	334.53	26.275	0.079	0.00706	0.023676	0.00086926	M- ,WMa
2	0.124	3405	420.51	25.915	0.062	0.0923	0.3887	0.014271	WMa
3	0.153	3122.6	477.27	27.222	0.057	0.0968	0.46283	0.016993	
4	0.189	2701.3	511.1	24.337	0.048	0.0982	0.50228	0.018441	
5	0.234	2249.2	526.52	25.648	0.049	0.0997	0.52552	0.019295	
6	0.29	1870.9	541.67	30.646	0.057	0.0984	0.53384	0.0196	
7	0.359	1544	553.28	27.668	0.050	0.0988	0.54715	0.020089	
8	0.444	1272.4	564.12	28.862	0.051	0.0974	0.54995	0.020192	
9	0.549	1031.5	566.09	23.636	0.042	0.0998	0.56569	0.02077	
10	0.68	856.49	581.19	32.276	0.056	0.099	0.576	0.021148	
11	0.841	708.5	595.02	30.05	0.051	0.0982	0.58498	0.021478	
12	1.04	575.84	597.86	38.993	0.065	0.0992	0.59461	0.021831	
13	1.29	471.41	605.75	36.721	0.061	0.0986	0.59857	0.021977	
14	1.59	386.19	613.84	39.771	0.065	0.0991	0.60958	0.022381	
15	1.97	315.49	620.2	44.238	0.071	0.0998	0.62044	0.02278	
16	2.44	258.79	629.42	45.346	0.072	0.0994	0.62741	0.023036	
17	3.02	213.88	643.46	48.605	0.076	0.0987	0.6368	0.02338	
18	3.73	174.21	647.99	55.319	0.085	0.0995	0.64717	0.023761	
19	4.62	142.33	655.09	55.079	0.084	0.0999	0.65665	0.024109	
20	5.71	116.17	661.05	61.302	0.093	0.0995	0.66061	0.024254	
21	7.07	95.162	669.41	68.402	0.102	0.0996	0.67032	0.024611	



Method description:

To measure G' and G'' by varying angular frequency in linear viscoelastic region. Vary Angular Frequency: 0.1 to 100 rad/s (Ramp Logarithmic). Keep Shear Strain constant at 0.1%

Frequency sweep of the ColMa 15% 18C

22	8.75	78.109	679.21	75.337	0.111	0.0989	0.67579	0.024812	
23	10.8	64.158	690.28	76.533	0.111	0.0996	0.69184	0.025401	
24	13.4	52.432	697.04	85.494	0.123	0.1	0.70399	0.025847	
25	16.6	43.417	714.25	86.834	0.122	0.0998	0.71798	0.026361	
26	20.5	35.504	721.39	97.888	0.136	0.1	0.72914	0.026771	
27	25.4	29.287	735.24	107.19	0.146	0.0997	0.74081	0.027199	
28	31.4	23.984	744.18	114.19	0.153	0.1	0.75395	0.027682	
29	38.8	19.615	748.4	142.62	0.191	0.101	0.76831	0.028209	
30	48.1	16.105	762.69	131.67	0.173	0.0999	0.77307	0.028384	
31	59.5	13.238	774.43	140.9	0.182	0.101	0.79606	0.029228	
32	73.6	10.756	775.86	155.53	0.200	0.0999	0.79055	0.029025	
33	91	8.6627	771.03	165.28	0.214	0.101	0.79333	0.029127	
34	113	6.8388	749.98	175.54	0.234	0.0996	0.76733	0.028173	
35	139	5.2879	712.39	188.44	0.265	0.1	0.73677	0.027051	
36	172	3.8371	628.91	205.4	0.327	0.1	0.66129	0.02428	
37	213	2.8045	560.12	210.34	0.376	0.1	0.60094	0.022064	
38	264	1.3894	308.59	198.21	0.642	0.1	0.36677	0.013466	
39	327	0.58026	0.0094757	189.51	20000.000	0.0999	0.18935	0.0069522	ME-,taD
40	404	1.6039	0.032408	648.15	20000.000	0.1	0.64851	0.02381	ME-,taD
41	500	2.8919	0.072297	1445.9	20000.000	0.1	1.4476	0.05315	ME-,taD



Method description:

To measure G' and G'' by varying angular frequency in linear viscoelastic region. Vary Angular Frequency: 0.1 to 100 rad/s (Ramp Logarithmic). Keep Shear Strain constant at 0.1%

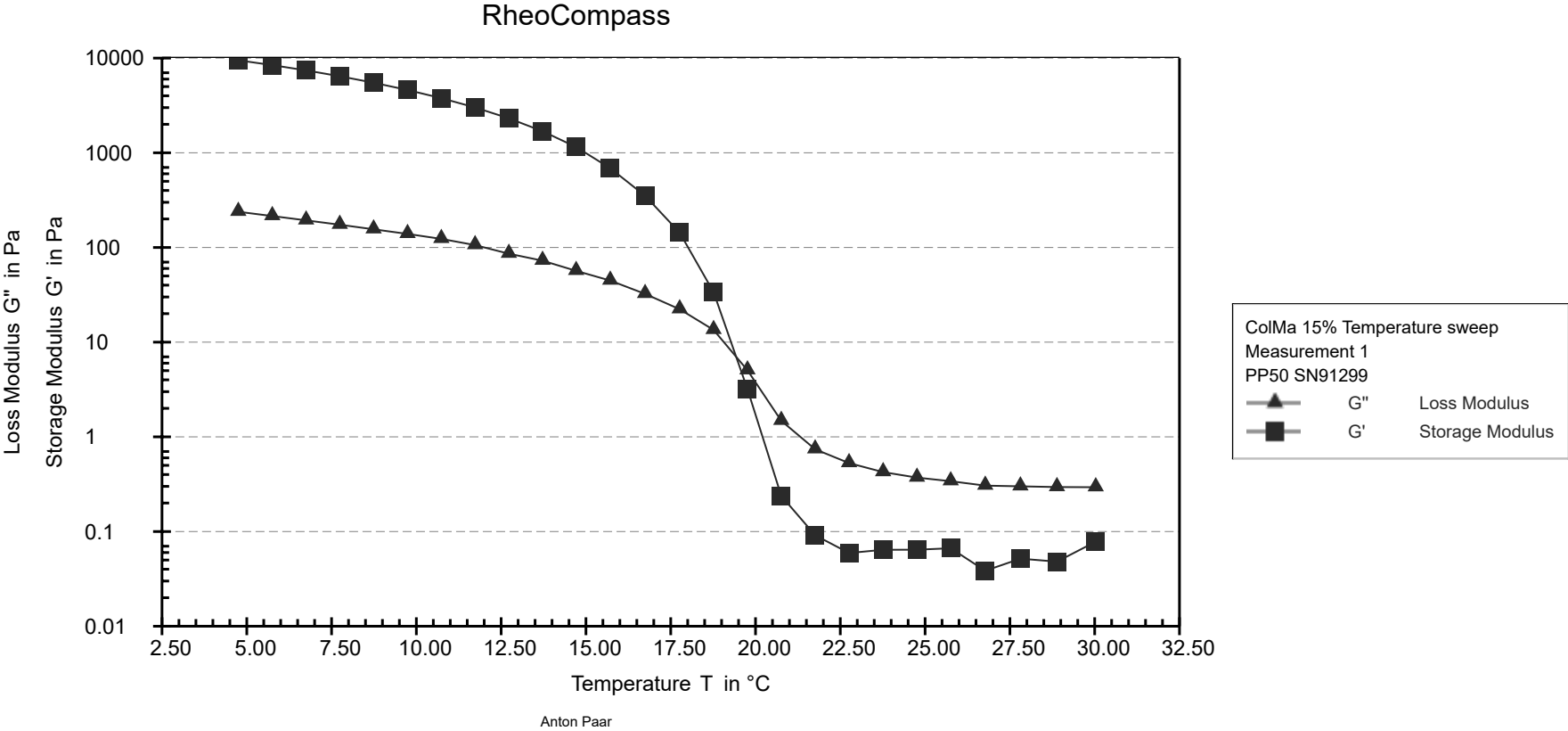
Frequency sweep of the ColMa 15% 18C



Method description:

To measure G' and G'' by varying angular frequency in linear viscoelastic region. Vary Angular Frequency: 0.1 to 100 rad/s (Ramp Logarithmic). Keep Shear Strain constant at 0.1%

Report



Anton Paar



Report

ColMa 15% Temperature sweep, Measurement 1, Interval 1

Point No. №	Temperature T [°C]	Storage Modulus G' [Pa]	Loss Modulus G'' [Pa]
1	30.03	0.078163	0.29374
2	28.89	0.048068	0.29487
3	27.81	0.051707	0.30019
4	26.77	0.038533	0.30538
5	25.76	0.066602	0.33992
6	24.76	0.064247	0.37127
7	23.76	0.064185	0.42424
8	22.76	0.059298	0.52837
9	21.76	0.091356	0.73926
10	20.76	0.23785	1.4776
11	19.76	3.1882	5.0496
12	18.76	33.726	13.472
13	17.76	143.31	22.264
14	16.74	351.61	32.355
15	15.72	686.55	44.7
16	14.71	1150.3	56.631
17	13.72	1688.9	72.502
18	12.73	2310.7	85.958
19	11.73	3008.9	105.93
20	10.74	3774.5	123.17
21	9.74	4603.7	139.05

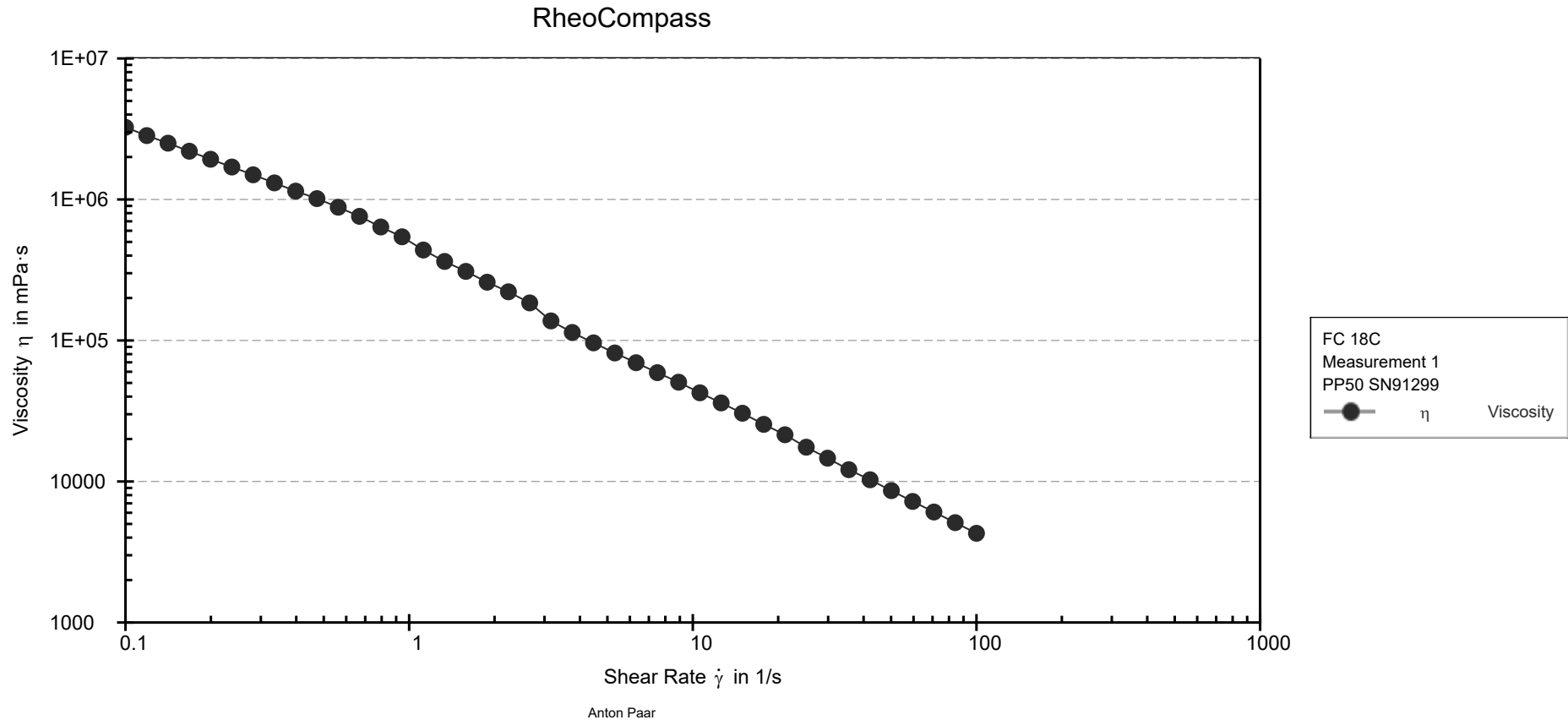
Anton Paar

Report

22	8.74	5495.9	155.55
23	7.74	6434.2	173.93
24	6.75	7414.2	193.31
25	5.75	8430.3	214.76
26	4.75	9483.2	238.27

Anton Paar

Flow curve of the ColMa 15% 18C



Method description:

To measure viscosity by varying Shear Rate. Vary Shear Rate: 0.1 to 100 s⁻¹ (Ramp Logarithmic)

Flow curve of the ColMa 15% 18C

FC ColSa 1, Measurement 1, Interval 1

Point No. №	Shear Rate $\dot{\gamma}$ [1/s]	Shear Stress τ [Pa]	Viscosity η [mPa·s]	Torque M [mN·m]	Status Stat
1	0.1	136.78	1.3677E+06	5.0219	Sdy,Dy_auto
2	0.119	142.47	1.1987E+06	5.2307	Sdy,Dy_auto
3	0.141	147.21	1.0421E+06	5.4048	Sdy,Dy_auto
4	0.168	152.14	9.0623E+05	5.5858	Sdy,Dy_auto
5	0.2	158.06	7.9219E+05	5.8033	Sdy,Dy_auto
6	0.237	164.66	6.9434E+05	6.0454	Sdy,Dy_auto
7	0.282	171.94	6.1008E+05	6.313	Sdy,Dy_auto
8	0.335	180.06	5.3755E+05	6.6111	Sdy,Dy_auto
9	0.398	188.16	4.7262E+05	6.9082	Sdy,Dy_auto
10	0.473	197.31	4.1702E+05	7.2444	Sdy,Dy_auto
11	0.562	206.09	3.6648E+05	7.5666	Sdy,Dy_auto
12	0.668	215.55	3.2252E+05	7.9141	Sdy,Dy_auto
13	0.794	224.2	2.8225E+05	8.2315	Sdy,Dy_auto
14	0.944	234.23	2.4811E+05	8.5997	Sdy,Dy_auto
15	1.12	244.52	2.1792E+05	8.9775	Sdy,Dy_auto
16	1.33	256.2	1.9212E+05	9.4066	Sdy,Dy_auto
17	1.58	270.6	1.7074E+05	9.9353	Sdy,Dy_auto
18	1.88	286.79	1.5225E+05	10.53	Sdy,Dy_auto
19	2.24	299.75	1.3389E+05	11.005	Sdy,Dy_auto
20	2.66	310.08	1.1654E+05	11.385	Sdy,Dy_auto
21	3.16	318.51	1.0072E+05	11.694	Sdy,Dy_auto



Method description:

To measure viscosity by varying Shear Rate. Vary Shear Rate: 0.1 to 100 s⁻¹ (Ramp Logarithmic)

Flow curve of the ColMa 15% 18C

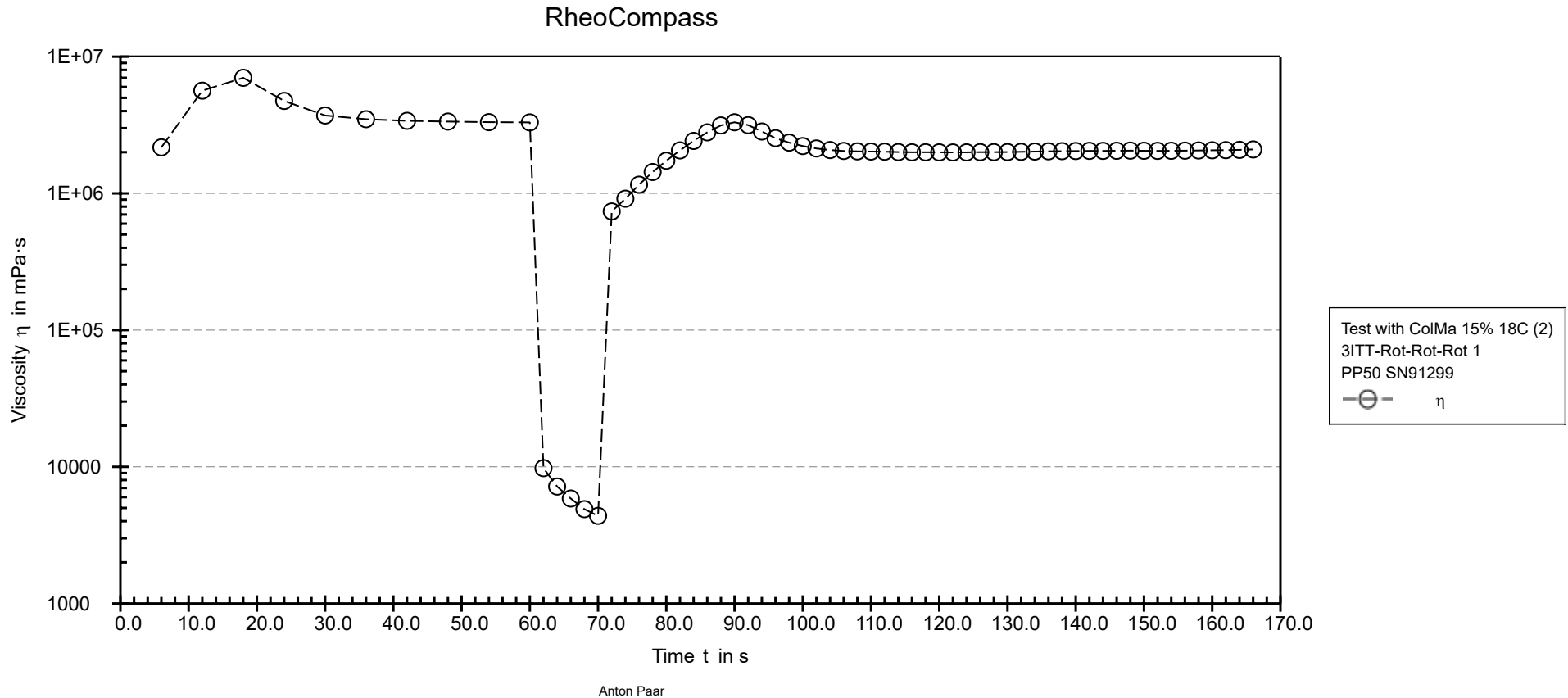
22	3.76	326.74	86938	11.997	Sdy,Dy_auto
23	4.47	339.45	75994	12.463	Sdy,Dy_auto
24	5.31	351.97	66299	12.923	Sdy,Dy_auto
25	6.31	362.16	57399	13.297	Sdy,Dy_auto
26	7.5	371.69	49565	13.647	Sdy,Dy_auto
27	8.91	378.66	42486	13.903	Sdy,Dy_auto
28	10.6	384.66	36314	14.123	Sdy,Dy_auto
29	12.6	388.2	30836	14.253	Sdy,Dy_auto
30	15	394.27	26351	14.476	Sdy,Dy_auto
31	17.8	399.92	22489	14.683	Sdy,Dy_auto
32	21.1	402.93	19064	14.794	Sdy,Dy_auto
33	25.1	401.76	15993	14.751	Sdy,Dy_auto
34	29.9	405.5	13582	14.888	Sdy,Dy_auto
35	35.5	401.43	11313	14.739	Sdy,Dy_auto
36	42.2	406.91	9648.9	14.94	Sdy,Dy_auto
37	50.1	406.29	8106.5	14.917	Sdy,Dy_auto
38	59.6	412.94	6932.2	15.161	Sdy,Dy_auto
39	70.8	418.68	5913.6	15.372	Sdy,Dy_auto
40	84.1	421.36	5007.7	15.471	Sdy,Dy_auto
41	100	427.95	4279.3	15.712	Sdy,Dy_auto



Method description:

To measure viscosity by varying Shear Rate. Vary Shear Rate: 0.1 to 100 s⁻¹ (Ramp Logarithmic)

Thixotropic Behavior of the ColMa 15% 18C



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

TX ColSa, 3ITT-Rot-Rot-Rot 1, Interval 1

Point No. №	Time t [s]	Shear Stress τ [Pa]	Viscosity η [mPa·s]	Torque M [μ N·m]	Status Stat
1	6.00	14.825	1.4825E+05	544.31	Dy_au t o
2	12.00	42.955	4.2955E+05	1577.1	Dy_au t o
3	18.00	93.934	9.3931E+05	3448.8	Dy_au t o
4	24.00	138.75	1.3875E+06	5094.4	Dy_au t o
5	30.00	132.14	1.3214E+06	4851.6	Dy_au t o
6	36.00	124.05	1.2405E+06	4554.6	Dy_au t o
7	42.00	113.38	1.1338E+06	4162.8	Dy_au t o
8	48.00	106.36	1.0636E+06	3905	Dy_au t o
9	54.00	102.83	1.0283E+06	3775.6	Dy_au t o
10	60.00	101.13	1.0113E+06	3712.9	Dy_au t o

TX ColSa, 3ITT-Rot-Rot-Rot 1, Interval 2



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

Point No. №	Time t [s]	Shear Stress τ [Pa]	Viscosity η [mPa·s]	Torque M [μ N·m]	Status Stat
1	62.00	199.72	1995.8	7332.9	Dy_au to
2	64.00	173.64	1735.3	6375.3	Dy_au to
3	66.00	162.03	1619.7	5949	Dy_au to
4	68.00	155.22	1551.8	5698.9	Dy_au to
5	70.00	151.9	1518.8	5577.2	Dy_au to

TX ColSa, 3ITT-Rot-Rot-Rot 1, Interval 3

Point No. №	Time t [s]	Shear Stress τ [Pa]	Viscosity η [mPa·s]	Torque M [μ N·m]	Status Stat
1	72.00	7.0131	70130	257.49	Dy_au to
2	74.00	8.0303	80305	294.84	Dy_au to
3	76.00	10.537	1.0537E+05	386.89	Dy_au to
4	78.00	13.858	1.3858E+05	508.79	Dy_au to



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

5	80.00	18.007	1.8006E+05	661.15	Dy_au to
6	82.00	23.071	2.3075E+05	847.08	Dy_au to
7	84.00	29.159	2.9157E+05	1070.6	Dy_au to
8	86.00	36.367	3.6367E+05	1335.2	Dy_au to
9	88.00	44.752	4.4748E+05	1643.1	Dy_au to
10	90.00	54.349	5.4348E+05	1995.5	Dy_au to
11	92.00	65.155	6.516E+05	2392.2	Dy_au to
12	94.00	76.964	7.6966E+05	2825.7	Dy_au to
13	96.00	89.402	8.94E+05	3282.4	Dy_au to
14	98.00	101.75	1.0175E+06	3735.6	Dy_au to
15	100.00	112.37	1.1236E+06	4125.5	Dy_au to
16	102.00	119.04	1.1903E+06	4370.6	Dy_au to
17	104.00	122.01	1.2201E+06	4479.8	Dy_au to
18	106.00	123.46	1.2346E+06	4532.9	Dy_au to



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

19	108.00	123.56	1.2356E+06	4536.7	o Dy_aut o
20	110.00	122.97	1.2297E+06	4514.9	Dy_aut o
21	112.00	122.25	1.2225E+06	4488.3	Dy_aut o
22	114.00	121.35	1.2135E+06	4455.3	Dy_aut o
23	116.00	120.41	1.2041E+06	4420.9	Dy_aut o
24	118.00	118.96	1.1896E+06	4367.7	Dy_aut o
25	120.00	117.3	1.173E+06	4306.8	Dy_aut o
26	122.00	115.94	1.1594E+06	4257	Dy_aut o
27	124.00	114.96	1.1497E+06	4220.8	Dy_aut o
28	126.00	114.31	1.1431E+06	4196.8	Dy_aut o
29	128.00	113.82	1.1382E+06	4178.9	Dy_aut o
30	130.00	113.47	1.1347E+06	4166	Dy_aut o
31	132.00	113.19	1.132E+06	4155.8	Dy_aut o



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

32	134.00	113.08	1.1308E+06	4151.8	Dy_au t o
33	136.00	113.09	1.1308E+06	4152	Dy_au t o
34	138.00	113.11	1.131E+06	4152.9	Dy_au t o
35	140.00	113.12	1.1312E+06	4153.1	Dy_au t o
36	142.00	113.13	1.1313E+06	4153.5	Dy_au t o
37	144.00	113.14	1.1314E+06	4153.9	Dy_au t o
38	146.00	113.2	1.132E+06	4156.2	Dy_au t o
39	148.00	113.28	1.1329E+06	4159.1	Dy_au t o
40	150.00	113.33	1.1333E+06	4161	Dy_au t o
41	152.00	113.36	1.1336E+06	4161.9	Dy_au t o
42	154.00	113.47	1.1347E+06	4166.2	Dy_au t o
43	156.00	113.62	1.1362E+06	4171.7	Dy_au t o
44	158.00	113.76	1.1376E+06	4176.6	Dy_au t o
45	160.00	113.89	1.139E+06	4181.7	Dy_au t



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

46	162.00	114.11	1.1411E+06	4189.5	o Dy_aut o
47	164.00	114.31	1.143E+06	4197	Dy_aut o
48	166.00	114.48	1.1449E+06	4203.2	Dy_aut o
49	168.00	114.71	1.1471E+06	4211.6	Dy_aut o
50	170.00	115.01	1.1501E+06	4222.6	Dy_aut o
51	172.00	115.32	1.1533E+06	4234.1	Dy_aut o
52	174.00	115.61	1.1561E+06	4244.7	Dy_aut o
53	176.00	115.88	1.1588E+06	4254.5	Dy_aut o
54	178.00	116.11	1.1611E+06	4263	Dy_aut o
55	180.00	116.33	1.1634E+06	4271.1	Dy_aut o
56	182.00	116.62	1.1662E+06	4281.8	Dy_aut o
57	184.00	116.96	1.1696E+06	4294.4	Dy_aut o
58	186.00	117.23	1.1723E+06	4304.2	Dy_aut o



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

59	188.00	117.48	1.1747E+06	4313.2	Dy_au to
60	190.00	117.73	1.1773E+06	4322.6	Dy_au to

Test with ColMa 15% 18C, 3ITT-Rot-Rot-Rot 1, Interval 1

Point No. Nº	Time t [s]	Shear Stress τ [Pa]	Viscosity η [mPa·s]	Torque M [μ N·m]	Status Stat
1	6.00	235.62	2.3562E+06	8650.8	Dy_au to
2	12.00	679.67	6.7969E+06	24954	Dy_au to
3	18.00	1140.5	1.1404E+07	41875	Dy_au to
4	24.00	1045.3	1.0453E+07	38380	Dy_au to
5	30.00	842.39	8.4236E+06	30928	Dy_au to
6	36.00	609.49	6.095E+06	22378	Dy_au to
7	42.00	548.49	5.485E+06	20138	Dy_au to
8	48.00	523.94	5.2394E+06	19236	Dy_au to
9	54.00	525.96	5.2595E+06	19311	Dy_au



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

10	60.00	519.19	5.1921E+06	19062	Dy_au to
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Test with ColMa 15% 18C, 3ITT-Rot-Rot-Rot 1, Interval 2

Point No. Nº	Time t [s]	Shear Stress τ [Pa]	Viscosity η [mPa·s]	Torque M [μ N·m]	Status Stat
1	62.00	976.41	9737.7	35849	Dy_au to
2	64.00	730.25	7281.2	26811	Dy_au to
3	66.00	598.42	5974.1	21971	Dy_au to
4	68.00	542.11	5411.9	19904	Dy_au to
5	70.00	486.94	4867.6	17878	Dy_au to

Test with ColMa 15% 18C, 3ITT-Rot-Rot-Rot 1, Interval 3

Point No. Nº	Time t [s]	Shear Stress τ [Pa]	Viscosity η [mPa·s]	Torque M [μ N·m]	Status Stat
1	72.00	77.979	7.7984E+05	2863	Dy_au to
2	74.00	97.833	9.7831E+05	3592	Dy_au



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

3	76.00	126.18	1.2619E+06	4632.8	o Dy_aut o
4	78.00	158.57	1.5856E+06	5822	o Dy_aut o
5	80.00	194.32	1.9431E+06	7134.4	o Dy_aut o
6	82.00	233.55	2.3357E+06	8574.9	o Dy_aut o
7	84.00	275.63	2.7562E+06	10120	o Dy_aut o
8	86.00	318.27	3.1826E+06	11686	o Dy_aut o
9	88.00	359.41	3.5942E+06	13196	o Dy_aut o
10	90.00	385.74	3.8572E+06	14163	o Dy_aut o
11	92.00	372.69	3.7265E+06	13683	o Dy_aut o
12	94.00	334.74	3.3474E+06	12290	o Dy_aut o
13	96.00	302.76	3.0277E+06	11116	o Dy_aut o
14	98.00	282.68	2.8268E+06	10379	o Dy_aut o
15	100.00	271.25	2.7126E+06	9958.9	o Dy_aut o



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

16	102.00	264.27	2.6431E+06	9702.7	Dy_au to
17	104.00	259.81	2.5982E+06	9539	Dy_au to
18	106.00	257.22	2.5722E+06	9443.8	Dy_au to
19	108.00	254.94	2.5493E+06	9360.3	Dy_au to
20	110.00	253.66	2.5367E+06	9313.1	Dy_au to
21	112.00	252.79	2.5278E+06	9281.2	Dy_au to
22	114.00	252.03	2.5203E+06	9253.3	Dy_au to
23	116.00	250.71	2.507E+06	9204.8	Dy_au to
24	118.00	249.52	2.4952E+06	9161.4	Dy_au to
25	120.00	249.53	2.4952E+06	9161.4	Dy_au to
26	122.00	249.77	2.4979E+06	9170.3	Dy_au to
27	124.00	250.5	2.5048E+06	9197.4	Dy_au to
28	126.00	251.21	2.512E+06	9223.4	Dy_au to
29	128.00	252.43	2.5245E+06	9268.1	Dy_au to



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

30	130.00	253.88	2.5388E+06	9321.3	o Dy_aut o
31	132.00	255.34	2.5533E+06	9374.8	Dy_aut o
32	134.00	255.91	2.5591E+06	9395.8	Dy_aut o
33	136.00	256.41	2.5639E+06	9414.1	Dy_aut o
34	138.00	257.05	2.5707E+06	9437.6	Dy_aut o
35	140.00	257.71	2.5768E+06	9462.1	Dy_aut o
36	142.00	258.2	2.5822E+06	9480	Dy_aut o
37	144.00	258.27	2.5828E+06	9482.3	Dy_aut o
38	146.00	258.79	2.588E+06	9501.4	Dy_aut o
39	148.00	259.47	2.5945E+06	9526.6	Dy_aut o
40	150.00	260.63	2.6062E+06	9569.1	Dy_aut o
41	152.00	261.8	2.618E+06	9612.1	Dy_aut o
42	154.00	262.46	2.6246E+06	9636.3	Dy_aut o



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

43	156.00	262.94	2.6296E+06	9654	Dy_au to
44	158.00	263.76	2.6375E+06	9684	Dy_au to
45	160.00	265.06	2.6505E+06	9731.9	Dy_au to
46	162.00	266.29	2.663E+06	9777	Dy_au to
47	164.00	266.93	2.6694E+06	9800.3	Dy_au to
48	166.00	266.78	2.6679E+06	9794.9	Dy_au to
49	168.00	266.37	2.6637E+06	9780	Dy_au to
50	170.00	266.44	2.6644E+06	9782.6	Dy_au to
51	172.00	267.04	2.6706E+06	9804.4	Dy_au to
52	174.00	267.63	2.6765E+06	9826.3	Dy_au to
53	176.00	268.91	2.6889E+06	9873.1	Dy_au to
54	178.00	269.79	2.6976E+06	9905.6	Dy_au to
55	180.00	269.94	2.6994E+06	9910.9	Dy_au to
56	182.00	270.18	2.7017E+06	9919.8	Dy_au



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).

Thixotropic Behavior of the ColMa 15% 18C

57	184.00	270.21	2.702E+06	9920.9	o Dy_aut o
58	186.00	270.33	2.7033E+06	9925.2	o Dy_aut o
59	188.00	270.6	2.706E+06	9935	o Dy_aut o
60	190.00	271.26	2.7124E+06	9959.3	o Dy_aut o



Method description:

To measure viscosity by varying Shear Rate periodically high and low. Vary Shear Rate periodically from 0.1 s⁻¹ (for 60 s) to 100 s⁻¹ (for 10 s) and than to 0.1 s⁻¹ (120 s).