

Appendix B: Dynamic cooling controlled shear rate rheometry at 1s⁻¹, 10 s⁻¹ and 50 s⁻¹ and 1°C/min

B0 statistical analysis for Abu-attifel crude oil at shear rate 10s-1

Runs	R1	R2	R3	Mean	STDEV	% difference
Temperature °C	Viscosity Pas	Viscosity Pas	Viscosity Pas			
85	0.002489	0.002684	0.003157	0.0028	0.0003	12.37
84.9	0.002394	0.002398	0.003025	0.0026	0.0004	13.94
84.6	0.002298	0.002533	0.003033	0.0026	0.0004	14.32
84.3	0.002263	0.00263	0.002981	0.0026	0.0004	13.68
83.9	0.002191	0.002698	0.002975	0.0026	0.0004	15.17
83.7	0.002504	0.002812	0.002997	0.0028	0.0002	8.99
83.4	0.002486	0.002976	0.003058	0.0028	0.0003	10.89
83.1	0.002432	0.002924	0.002952	0.0028	0.0003	10.56
82.9	0.002452	0.003024	0.002965	0.0028	0.0003	11.18
82.6	0.002537	0.002969	0.003008	0.0028	0.0003	9.21
82.4	0.002517	0.00297	0.00287	0.0028	0.0002	8.54
82.1	0.002463	0.0031	0.002933	0.0028	0.0003	11.66
81.9	0.002555	0.003104	0.002953	0.0029	0.0003	9.88
81.6	0.002573	0.003104	0.002909	0.0029	0.0003	9.39
81.4	0.002528	0.003058	0.002855	0.0028	0.0003	9.50
81.1	0.002502	0.002969	0.002891	0.0028	0.0003	8.98
80.9	0.002596	0.003057	0.002934	0.0029	0.0002	8.34
80.6	0.002635	0.00326	0.002937	0.0029	0.0003	10.62
80.4	0.002562	0.003117	0.002916	0.0029	0.0003	9.81
80.2	0.00257	0.003178	0.002966	0.0029	0.0003	10.62
79.9	0.002667	0.003141	0.002981	0.0029	0.0002	8.23
79.6	0.00265	0.003188	0.002956	0.0029	0.0003	9.21
79.4	0.0026	0.003058	0.002984	0.0029	0.0002	8.53
79.1	0.002636	0.00317	0.003015	0.0029	0.0003	9.34
78.9	0.002716	0.003201	0.003058	0.0030	0.0002	8.33
78.7	0.002591	0.003273	0.003005	0.0030	0.0003	11.62
78.4	0.002559	0.003244	0.003036	0.0029	0.0004	11.92
78.1	0.002607	0.003157	0.003074	0.0029	0.0003	10.06
77.9	0.002628	0.003188	0.003095	0.0030	0.0003	10.10
77.6	0.002536	0.003283	0.003071	0.0030	0.0004	12.99
77.4	0.002446	0.003209	0.003114	0.0029	0.0004	14.23
77.1	0.002553	0.003166	0.003145	0.0030	0.0003	11.78
76.9	0.002645	0.003212	0.003172	0.0030	0.0003	10.51
76.7	0.002639	0.003181	0.003133	0.0030	0.0003	10.05
76.4	0.002569	0.003243	0.003186	0.0030	0.0004	12.46

76.1	0.002673	0.003182	0.00322	0.0030	0.0003	10.10
75.9	0.002596	0.003163	0.003209	0.0030	0.0003	11.42
75.7	0.00257	0.003166	0.003205	0.0030	0.0004	11.94
75.4	0.002679	0.003216	0.003257	0.0031	0.0003	10.57
75.1	0.002763	0.003223	0.003273	0.0031	0.0003	9.11
74.9	0.002744	0.003211	0.003268	0.0031	0.0003	9.35
74.6	0.002724	0.00322	0.003267	0.0031	0.0003	9.80
74.4	0.002815	0.003274	0.003328	0.0031	0.0003	8.98
74.1	0.002786	0.003283	0.003371	0.0031	0.0003	10.02
73.9	0.002741	0.003272	0.003322	0.0031	0.0003	10.35
73.7	0.002728	0.003306	0.003344	0.0031	0.0003	11.04
73.4	0.002766	0.003333	0.003387	0.0032	0.0003	10.88
73.2	0.002773	0.003384	0.003422	0.0032	0.0004	11.41
72.9	0.002654	0.003326	0.003402	0.0031	0.0004	13.16
72.6	0.002866	0.003414	0.003436	0.0032	0.0003	9.97
72.4	0.002732	0.003445	0.003511	0.0032	0.0004	13.38
72.1	0.002746	0.003416	0.003457	0.0032	0.0004	12.45
71.9	0.002807	0.003411	0.003473	0.0032	0.0004	11.39
71.6	0.002874	0.00351	0.00353	0.0033	0.0004	11.29
71.4	0.002967	0.003513	0.003579	0.0034	0.0003	10.02
71.1	0.003106	0.003482	0.003575	0.0034	0.0002	7.33
70.9	0.002805	0.003517	0.003563	0.0033	0.0004	12.90
70.6	0.002862	0.003591	0.003689	0.0034	0.0005	13.37
70.4	0.003168	0.003595	0.003682	0.0035	0.0003	7.90
70.1	0.00309	0.00359	0.003671	0.0035	0.0003	9.12
69.9	0.003083	0.003622	0.003718	0.0035	0.0003	9.85
69.6	0.003144	0.003722	0.003803	0.0036	0.0004	10.11
69.4	0.003039	0.003727	0.003805	0.0035	0.0004	11.96
69.2	0.003238	0.003708	0.003816	0.0036	0.0003	8.57
68.9	0.003292	0.003841	0.003926	0.0037	0.0003	9.34
68.7	0.003365	0.003903	0.004112	0.0038	0.0004	10.16
68.4	0.003407	0.003974	0.004144	0.0038	0.0004	10.05
68.1	0.003109	0.00404	0.004243	0.0038	0.0006	15.92
67.9	0.003345	0.004191	0.004422	0.0040	0.0006	14.23
67.6	0.003457	0.004368	0.004514	0.0041	0.0006	13.93
67.4	0.003551	0.004396	0.004567	0.0042	0.0005	13.04
67.2	0.003599	0.004492	0.004714	0.0043	0.0006	13.83
66.9	0.003899	0.004716	0.00487	0.0045	0.0005	11.61
66.6	0.004153	0.004793	0.005076	0.0047	0.0005	10.12
66.4	0.004218	0.00486	0.005191	0.0048	0.0005	10.40
66.2	0.004467	0.005015	0.005435	0.0050	0.0005	9.76
65.9	0.004612	0.005309	0.00572	0.0052	0.0006	10.74
65.6	0.004806	0.005512	0.006026	0.0054	0.0006	11.24
65.4	0.004961	0.005733	0.006447	0.0057	0.0007	13.01

65.1	0.005023	0.006158	0.007036	0.0061	0.0010	16.62
64.9	0.005176	0.006568	0.007646	0.0065	0.0012	19.16
64.6	0.005471	0.007018	0.008575	0.0070	0.0016	22.10
64.4	0.005706	0.007672	0.009315	0.0076	0.0018	23.89
64.1	0.00626	0.008464	0.01061	0.0084	0.0022	25.76
63.9	0.006441	0.009518	0.01223	0.0094	0.0029	30.82
63.7	0.006863	0.01045	0.01388	0.0104	0.0035	33.75
63.4	0.007589	0.01179	0.01578	0.0117	0.0041	34.95
63.1	0.008314	0.01373	0.01792	0.0133	0.0048	36.15
62.9	0.009564	0.01541	0.02024	0.0151	0.0053	35.47
62.7	0.01044	0.01714	0.02263	0.0167	0.0061	36.48
62.4	0.01197	0.01998	0.02569	0.0192	0.0069	35.87
62.1	0.01333	0.02262	0.02871	0.0216	0.0077	35.94
61.9	0.01551	0.02502	0.03141	0.0240	0.0080	33.36
61.6	0.01742	0.0273	0.03402	0.0262	0.0083	31.81
61.4	0.01975	0.02983	0.03625	0.0286	0.0083	29.07
61.2	0.02209	0.03218	0.0382	0.0308	0.0081	26.41
60.9	0.0243	0.0344	0.04063	0.0331	0.0082	24.89
60.6	0.02654	0.03658	0.04318	0.0354	0.0084	23.65
60.4	0.02963	0.03956	0.04581	0.0383	0.0082	21.29
60.2	0.03203	0.04189	0.04798	0.0406	0.0080	19.81
59.9	0.03424	0.04448	0.05046	0.0431	0.0082	19.05
59.6	0.03676	0.04678	0.05303	0.0455	0.0082	18.03
59.4	0.03942	0.04927	0.05506	0.0479	0.0079	16.50
59.1	0.04152	0.05093	0.05695	0.0498	0.0078	15.62
58.9	0.04378	0.0531	0.0588	0.0519	0.0076	14.61
58.7	0.04645	0.05566	0.06145	0.0545	0.0076	13.88
58.4	0.04848	0.05748	0.06312	0.0564	0.0074	13.10
58.1	0.05045	0.0591	0.06491	0.0582	0.0073	12.51
57.9	0.05229	0.06098	0.06703	0.0601	0.0074	12.33
57.7	0.05484	0.0634	0.06913	0.0625	0.0072	11.51
57.4	0.05696	0.06512	0.07102	0.0644	0.0071	10.97
57.2	0.05874	0.06669	0.07222	0.0659	0.0068	10.29
56.9	0.06056	0.06861	0.07426	0.0678	0.0069	10.15
56.7	0.06259	0.07059	0.07573	0.0696	0.0066	9.51
56.4	0.06396	0.07232	0.0774	0.0712	0.0068	9.53
56.1	0.06538	0.0735	0.07936	0.0727	0.0070	9.65
55.9	0.06704	0.07538	0.08068	0.0744	0.0069	9.25
55.7	0.06911	0.07689	0.08176	0.0759	0.0064	8.40
55.4	0.07058	0.07781	0.08391	0.0774	0.0067	8.62
55.1	0.07197	0.07963	0.08503	0.0789	0.0066	8.32
54.9	0.07366	0.08137	0.0863	0.0804	0.0064	7.92
54.7	0.07547	0.0824	0.08782	0.0819	0.0062	7.56
54.4	0.07627	0.08408	0.08958	0.0833	0.0067	8.03

54.2	0.07785	0.08585	0.09091	0.0849	0.0066	7.76
53.9	0.07971	0.08749	0.09293	0.0867	0.0066	7.66
53.6	0.08122	0.08897	0.09421	0.0881	0.0065	7.42
53.4	0.08229	0.0905	0.09571	0.0895	0.0068	7.56
53.2	0.08367	0.09166	0.09735	0.0909	0.0069	7.56
52.9	0.08524	0.09335	0.09859	0.0924	0.0067	7.28
52.6	0.08648	0.09502	0.09994	0.0938	0.0068	7.26
52.4	0.08768	0.09597	0.1015	0.0951	0.0070	7.32
52.2	0.08936	0.09773	0.103	0.0967	0.0069	7.11
51.9	0.0908	0.09954	0.1047	0.0983	0.0070	7.14
51.6	0.09204	0.1001	0.1057	0.0993	0.0069	6.92
51.4	0.09313	0.1021	0.1076	0.1009	0.0073	7.24
51.2	0.0949	0.1038	0.1096	0.1028	0.0074	7.20
50.9	0.0965	0.1054	0.111	0.1043	0.0073	7.01
50.6	0.09762	0.1067	0.1122	0.1055	0.0074	6.98
50.4	0.09888	0.1083	0.114	0.1071	0.0076	7.13
50.1	0.1008	0.11	0.1158	0.1089	0.0076	6.95
49.9	0.1024	0.1114	0.1176	0.1105	0.0076	6.92
49.6	0.1035	0.1133	0.1198	0.1122	0.0082	7.31
49.4	0.105	0.1147	0.1211	0.1136	0.0081	7.14
49.1	0.1068	0.1172	0.1229	0.1156	0.0082	7.06
48.9	0.1085	0.1184	0.1251	0.1173	0.0084	7.12
48.7	0.1093	0.1203	0.1265	0.1187	0.0087	7.34
48.4	0.1112	0.1223	0.1285	0.1207	0.0088	7.26
48.2	0.1133	0.1234	0.1307	0.1225	0.0087	7.13
47.9	0.114	0.1262	0.1322	0.1241	0.0093	7.47
47.6	0.116	0.1277	0.1345	0.1261	0.0094	7.42
47.4	0.1178	0.1295	0.1365	0.1279	0.0094	7.39
47.2	0.1199	0.1318	0.1388	0.1302	0.0096	7.34
46.9	0.1209	0.1334	0.1405	0.1316	0.0099	7.54
46.7	0.1227	0.1358	0.143	0.1338	0.0103	7.69
46.4	0.1249	0.1385	0.1454	0.1363	0.0104	7.65
46.2	0.1267	0.1401	0.1472	0.1380	0.0104	7.54
45.9	0.1287	0.1428	0.1505	0.1407	0.0111	7.86
45.6	0.1308	0.1454	0.1526	0.1429	0.0111	7.77
45.4	0.1329	0.1485	0.1552	0.1455	0.0114	7.86
45.2	0.1344	0.1504	0.1579	0.1476	0.0120	8.13
44.9	0.1362	0.1528	0.1609	0.1500	0.0126	8.40
44.7	0.1392	0.156	0.1638	0.1530	0.0126	8.22
44.4	0.1417	0.1589	0.1672	0.1559	0.0130	8.34
44.1	0.1444	0.1619	0.1703	0.1589	0.0132	8.32
43.9	0.1465	0.1656	0.1738	0.1620	0.0140	8.65
43.6	0.1493	0.1695	0.1775	0.1654	0.0145	8.78
43.4	0.1516	0.1723	0.1811	0.1683	0.0151	9.00

43.1	0.155	0.1766	0.1848	0.1721	0.0154	8.94
42.9	0.1579	0.1811	0.19	0.1763	0.0166	9.40
42.7	0.1616	0.1857	0.1943	0.1805	0.0170	9.39
42.4	0.1641	0.1905	0.1992	0.1846	0.0183	9.90
42.2	0.1678	0.1955	0.2045	0.1893	0.0191	10.11
41.9	0.1726	0.1999	0.2115	0.1947	0.0200	10.26
41.7	0.177	0.2072	0.2186	0.2009	0.0215	10.70
41.4	0.18	0.2143	0.226	0.2068	0.0239	11.56
41.1	0.1857	0.2225	0.2341	0.2141	0.0253	11.80
40.9	0.1912	0.2311	0.2444	0.2222	0.0277	12.46
40.6	0.1959	0.2402	0.2555	0.2305	0.0310	13.43
40.4	0.2032	0.2513	0.2685	0.241	0.033847	14.04
40.1	0.2104	0.2647	0.2827	0.2526	0.037638	14.90

B1 at shear rate 1s-1

B1.1: Abu-attifel untreated

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.20	75.00	0.2167	1	0.2266
1, 2	25.83	74.80	0.2261	1	0.2269
1, 3	41.38	74.60	0.1012	1	0.1085
1, 4	56.70	74.30	0.0944	1	0.0908
1, 5	71.98	74.00	0.0706	1	0.0405
1, 6	87.29	73.60	0.0610	1	0.0301
1, 7	102.60	73.30	0.1410	1	0.1677
1, 8	117.90	73.10	0.0764	1	0.0487
1, 9	133.20	72.80	0.0745	1	0.0456
1, 10	148.50	72.60	0.0726	1	0.0433
1, 11	163.80	72.30	0.0889	1	0.0752
1, 12	179.10	72.10	0.0801	1	0.0552
1, 13	194.40	71.80	0.0702	1	0.0401
1, 14	209.70	71.60	0.0752	1	0.0472
1, 15	225.00	71.30	0.0749	1	0.0468
1, 16	240.30	71.10	0.0787	1	0.0530
1, 17	255.60	70.80	0.0828	1	0.0605
1, 18	270.90	70.60	0.0865	1	0.0683
1, 19	286.20	70.30	0.0880	1	0.0732
1, 20	301.50	70.00	0.0869	1	0.0692
1, 21	316.80	69.80	0.0937	1	0.0899
1, 22	332.10	69.50	0.1013	1	0.1114
1, 23	347.40	69.30	0.1673	1	0.1623
1, 24	362.70	69.00	0.1419	1	0.1412

1, 25	378.30	68.80	0.1013	1	0.1016
1, 26	393.60	68.50	0.1040	1	0.1049
1, 27	408.90	68.20	0.1728	1	0.1733
1, 28	424.50	68.00	0.1585	1	0.1571
1, 29	440.10	67.70	0.1440	1	0.1444
1, 30	455.40	67.50	0.1557	1	0.1553
1, 31	471.00	67.20	0.1441	1	0.1479
1, 32	486.30	67.00	0.1546	1	0.1527
1, 33	501.90	66.70	0.1558	1	0.1562
1, 34	517.20	66.50	0.1598	1	0.1617
1, 35	532.80	66.20	0.1853	1	0.1821
1, 36	548.40	65.90	0.1699	1	0.1658
1, 37	564.00	65.70	0.1649	1	0.1650
1, 38	579.60	65.40	0.1781	1	0.1774
1, 39	595.20	65.20	0.1769	1	0.1749
1, 40	610.80	64.90	0.1848	1	0.1828
1, 41	626.40	64.60	0.1814	1	0.1851
1, 42	642.00	64.40	0.2617	1	0.2640
1, 43	657.60	64.10	0.2016	1	0.2017
1, 44	673.20	63.80	0.2093	1	0.2064
1, 45	688.80	63.60	0.1991	1	0.1990
1, 46	704.40	63.30	0.1979	1	0.1977
1, 47	720.00	63.10	0.1899	1	0.1903
1, 48	735.60	62.80	0.1861	1	0.1857
1, 49	751.20	62.50	0.1918	1	0.1938
1, 50	766.80	62.30	0.1982	1	0.1983
1, 51	782.40	62.00	0.1979	1	0.1966
1, 52	797.90	61.80	0.1816	1	0.1798
1, 53	813.60	61.50	0.2009	1	0.2021
1, 54	829.20	61.30	0.2072	1	0.2062
1, 55	844.80	61.00	0.2114	1	0.2082
1, 56	860.40	60.70	0.1924	1	0.1969
1, 57	876.00	60.40	0.1893	1	0.1888
1, 58	891.50	60.20	0.1823	1	0.1897
1, 59	906.90	59.90	0.1870	1	0.1874
1, 60	922.50	59.70	0.1847	1	0.1874
1, 61	938.00	59.40	0.1854	1	0.1860
1, 62	953.70	59.10	0.2884	1	0.2788
1, 63	969.30	58.90	0.2283	1	0.2287
1, 64	984.90	58.70	0.2051	1	0.2029
1, 65	1000.00	58.40	0.2842	1	0.2989
1, 66	1016.00	58.10	0.2367	1	0.2376
1, 67	1032.00	57.90	0.2168	1	0.2206
1, 68	1047.00	57.60	0.1983	1	0.1978

1, 69	1063.00	57.30	0.2041	1	0.2150
1, 70	1078.00	57.10	0.1983	1	0.1979
1, 71	1094.00	56.80	0.2036	1	0.2039
1, 72	1110.00	56.60	0.1901	1	0.1862
1, 73	1125.00	56.30	0.2563	1	0.2512
1, 74	1141.00	56.10	0.2384	1	0.2389
1, 75	1156.00	55.80	0.2398	1	0.2401
1, 76	1172.00	55.50	0.2528	1	0.2540
1, 77	1188.00	55.30	0.2807	1	0.2812
1, 78	1203.00	55.00	0.2984	1	0.2987
1, 79	1219.00	54.70	0.3221	1	0.3199
1, 80	1234.00	54.50	0.3477	1	0.3516
1, 81	1250.00	54.20	0.3728	1	0.3720
1, 82	1266.00	54.00	0.3997	1	0.3994
1, 83	1281.00	53.70	0.4273	1	0.4301
1, 84	1297.00	53.40	0.4600	1	0.4589
1, 85	1312.00	53.20	0.4713	1	0.4720
1, 86	1328.00	52.90	0.5008	1	0.5025
1, 87	1343.00	52.70	0.5463	1	0.5442
1, 88	1359.00	52.40	0.5289	1	0.5058
1, 89	1375.00	52.10	0.5666	1	0.5701
1, 90	1390.00	51.90	0.6018	1	0.6039
1, 91	1406.00	51.60	0.6447	1	0.5081
1, 92	1421.00	51.40	0.6141	1	0.6125
1, 93	1437.00	51.20	0.6692	1	0.6789
1, 94	1453.00	50.90	0.7165	1	0.7340
1, 95	1468.00	50.70	0.7524	1	0.7555
1, 96	1484.00	50.20	0.8352	1	0.8271
1, 97	1499.00	50.00	0.7640	1	0.7628
1, 98	1515.00	49.70	0.8106	1	0.8051
1, 99	1531.00	49.50	1.0160	1	1.1370
1, 100	1546.00	49.30	1.8510	1	1.7980
1, 101	1562.00	49.10	1.2850	1	1.4730
1, 102	1577.00	48.80	2.2840	1	2.1370
1, 103	1593.00	48.60	2.7390	1	2.7530
1, 104	1609.00	48.30	5.3110	1	4.8730
1, 105	1624.00	48.00	5.4280	1	5.8250
1, 106	1640.00	47.80	3.0440	1	3.0900
1, 107	1655.00	47.50	3.0550	1	3.0160
1, 108	1671.00	47.20	4.1880	1	4.1510
1, 109	1687.00	47.00	5.6730	1	5.5000
1, 110	1702.00	46.70	8.6250	1	8.9600
1, 111	1718.00	46.40	1.3350	1	1.3410
1, 112	1733.00	46.20	1.4070	1	1.4110

1, 113	1749.00	45.90	1.4800	1	1.4880
1, 114	1764.00	45.70	1.5260	1	1.5360
1, 115	1780.00	45.40	1.7800	1	1.7390
1, 116	1796.00	45.10	1.8060	1	1.8130
1, 117	1811.00	44.90	3.1360	1	2.7790
1, 118	1827.00	44.70	5.7720	1	5.3300
1, 119	1843.00	44.40	4.3850	1	4.1890
1, 120	1858.00	44.10	4.2370	1	4.2180
1, 121	1874.00	43.80	4.7900	1	4.8280
1, 122	1889.00	43.60	4.2780	1	4.3160
1, 123	1905.00	43.30	8.9600	1	9.8560
1, 124	1920.00	43.10	8.1690	1	8.0760
1, 125	1936.00	42.80	4.5960	1	4.5880
1, 126	1952.00	42.60	3.7790	1	3.7360
1, 127	1967.00	42.30	5.7700	1	5.8320
1, 128	1983.00	42.00	3.9320	1	3.9570
1, 129	1998.00	41.80	3.9270	1	3.9560
1, 130	2014.00	41.50	4.1830	1	4.2130
1, 131	2030.00	41.20	4.8560	1	4.8800
1, 132	2045.00	41.00	4.9320	1	4.9830
1, 133	2061.00	40.70	5.4500	1	5.4580
1, 134	2076.00	40.40	5.9650	1	5.9390
1, 135	2092.00	40.20	6.4090	1	6.4460
1, 136	2108.00	39.90	7.1300	1	7.1470
1, 137	2123.00	39.70	7.5230	1	7.5510
1, 138	2139.00	39.40	9.6440	1	9.4740
1, 139	2154.00	39.20	11.4600	1	11.5100
1, 140	2170.00	38.90	11.9100	1	11.9600
1, 141	2186.00	38.60	12.8300	1	12.8400
1, 142	2201.00	38.40	16.1900	1	15.9100
1, 143	2217.00	38.10	16.7400	1	16.7000
1, 144	2232.00	37.90	17.1400	1	17.2000
1, 145	2248.00	37.60	18.4200	1	18.4900
1, 146	2264.00	37.30	19.9800	1	20.1300
1, 147	2279.00	37.10	21.8900	1	21.8200
1, 148	2295.00	36.80	24.7600	1	24.7700
1, 149	2310.00	36.60	26.5400	1	26.5100
1, 150	2326.00	36.30	40.9600	1	41.2100
1, 151	2342.00	36.00	41.1700	1	41.1200
1, 152	2357.00	35.80	42.0300	1	42.1200
1, 153	2373.00	35.50	43.6100	1	43.6200
1, 154	2388.00	35.30	47.9800	1	48.1700
1, 155	2404.00	35.00	48.6000	1	48.8400
1, 156	2420.00	34.70	52.8300	1	52.2100

1, 157	2435.00	34.50	55.0700	1	55.5100
1, 158	2451.00	34.20	82.2400	1	82.3800
1, 159	2466.00	34.00	85.9000	1	85.6400
1, 160	2482.00	33.70	86.3100	1	86.3000
1, 161	2498.00	33.40	86.8000	1	87.2400
1, 162	2513.00	33.20	89.2500	1	89.5900
1, 163	2529.00	33.00	91.9700	1	92.2400
1, 164	2544.00	32.70	95.6600	1	96.1100
1, 165	2560.00	32.40	100.9000	1	98.3100
1, 166	2575.00	32.10	101.8000	1	102.0000
1, 167	2591.00	31.90	103.3000	1	103.6000
1, 168	2607.00	31.60	105.7000	1	106.0000
1, 169	2622.00	31.40	115.9000	1	108.1000
1, 170	2637.00	31.10	146.7000	1	147.2000
1, 171	2653.00	30.90	156.3000	1	157.2000
1, 172	2669.00	30.60	158.8000	1	158.3000
1, 173	2684.00	30.30	166.2000	1	166.4000
1, 174	2700.00	30.10	181.8000	1	181.4000

B1.2: Abu-attifel treated with 500PPM ROA

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.22	75.00	0.0271	1	0.0089
1, 2	25.82	74.90	0.0266	1	0.0087
1, 3	41.40	74.70	0.0234	1	0.0074
1, 4	56.72	74.40	0.0194	1	0.0059
1, 5	72.31	74.00	0.0102	1	0.0029
1, 6	87.92	73.70	0.0023	1	0.0006
1, 7	103.50	73.30	0.0021	1	0.0005
1, 8	119.10	73.00	0.0049	1	0.0012
1, 9	134.40	72.80	0.0171	1	0.0039
1, 10	150.00	72.50	0.0209	1	0.0047
1, 11	165.30	72.30	0.0180	1	0.0041
1, 12	180.90	72.00	0.0092	1	0.0022
1, 13	196.20	71.80	0.0070	1	0.0017
1, 14	211.80	71.50	0.0130	1	0.0031
1, 15	227.40	71.30	0.0086	1	0.0021
1, 16	242.70	71.10	0.0098	1	0.0027
1, 17	258.30	70.70	0.0259	1	0.0084
1, 18	273.60	70.50	0.0295	1	0.0100
1, 19	288.90	70.20	0.0216	1	0.0067
1, 20	304.50	70.00	0.0143	1	0.0042

1, 21	320.10	69.70	0.0088	1	0.0024
1, 22	335.40	69.50	0.0018	1	0.0005
1, 23	351.00	69.20	0.0031	1	0.0008
1, 24	366.30	68.90	-0.0014	1	0.0004
1, 25	381.90	68.70	-0.0114	1	0.0027
1, 26	397.50	68.50	-0.0196	1	0.0044
1, 27	413.10	68.20	-0.0168	1	0.0038
1, 28	428.70	67.90	-0.0100	1	0.0024
1, 29	444.00	67.60	-0.0056	1	0.0014
1, 30	459.60	67.40	-0.0108	1	0.0026
1, 31	474.90	67.20	-0.0054	1	0.0013
1, 32	490.50	66.90	0.0112	1	0.0032
1, 33	505.80	66.60	0.0272	1	0.0090
1, 34	521.40	66.40	0.0330	1	0.0115
1, 35	536.70	66.10	0.0267	1	0.0088
1, 36	552.30	65.80	0.0168	1	0.0050
1, 37	567.60	65.60	0.0086	1	0.0024
1, 38	583.20	65.30	0.0046	1	0.0013
1, 39	598.50	65.10	0.0039	1	0.0011
1, 40	614.10	64.80	0.0063	1	0.0017
1, 41	629.70	64.60	-0.0005	1	0.0001
1, 42	645.30	64.30	-0.0096	1	0.0023
1, 43	660.90	64.00	-0.0066	1	0.0016
1, 44	676.20	63.80	-0.0037	1	0.0009
1, 45	691.80	63.60	0.0036	1	0.0010
1, 46	707.40	63.30	0.0075	1	0.0021
1, 47	723.00	63.10	0.0067	1	0.0019
1, 48	738.60	62.70	0.0121	1	0.0035
1, 49	754.20	62.50	0.0284	1	0.0095
1, 50	769.50	62.20	0.0440	1	0.0173
1, 51	784.70	62.00	0.0513	1	0.0223
1, 52	800.00	61.80	0.0508	1	0.0218
1, 53	815.30	61.50	0.0458	1	0.0185
1, 54	830.70	61.20	0.0427	1	0.0168
1, 55	846.20	61.00	0.0424	1	0.0166
1, 56	861.60	60.70	0.0403	1	0.0155
1, 57	877.20	60.40	0.0376	1	0.0139
1, 58	892.70	60.20	0.0373	1	0.0139
1, 59	908.00	60.00	0.0378	1	0.0141
1, 60	923.40	59.70	0.0383	1	0.0143
1, 61	938.90	59.40	0.0384	1	0.0144
1, 62	954.50	59.10	0.0388	1	0.0145
1, 63	969.80	58.90	0.0415	1	0.0162
1, 64	985.40	58.60	0.0529	1	0.0235

1, 65	1001.00	58.40	0.0598	1	0.0294
1, 66	1016.00	58.10	0.0675	1	0.0372
1, 67	1031.00	57.90	0.0734	1	0.0442
1, 68	1047.00	57.60	0.0806	1	0.0569
1, 69	1062.00	57.40	0.0844	1	0.0639
1, 70	1077.00	57.20	0.0894	1	0.0769
1, 71	1093.00	56.80	0.0919	1	0.0839
1, 72	1108.00	56.60	0.0933	1	0.0887
1, 73	1123.00	56.40	0.0982	1	0.1052
1, 74	1138.00	56.10	0.1071	1	0.1102
1, 75	1154.00	55.80	0.1077	1	0.1081
1, 76	1169.00	55.60	0.1126	1	0.1100
1, 77	1184.00	55.30	0.1109	1	0.1135
1, 78	1200.00	55.10	0.1200	1	0.1180
1, 79	1215.00	54.80	0.1153	1	0.1196
1, 80	1230.00	54.60	0.1128	1	0.1123
1, 81	1246.00	54.30	0.1589	1	0.1634
1, 82	1261.00	54.00	0.2449	1	0.2466
1, 83	1277.00	53.80	0.2054	1	0.2067
1, 84	1292.00	53.50	0.1897	1	0.1870
1, 85	1308.00	53.30	0.1921	1	0.2004
1, 86	1324.00	53.00	0.1658	1	0.1654
1, 87	1339.00	52.70	0.1581	1	0.1565
1, 88	1355.00	52.50	0.1620	1	0.1626
1, 89	1370.00	52.20	0.2210	1	0.2174
1, 90	1386.00	52.00	0.1869	1	0.1867
1, 91	1402.00	51.70	0.1698	1	0.1680
1, 92	1417.00	51.50	0.1499	1	0.1496
1, 93	1432.00	51.20	0.1486	1	0.1481
1, 94	1448.00	50.90	0.1419	1	0.1422
1, 95	1464.00	50.70	0.1311	1	0.1323
1, 96	1479.00	50.50	0.1303	1	0.1328
1, 97	1494.00	50.20	0.1372	1	0.1369
1, 98	1509.00	49.90	0.1309	1	0.1310
1, 99	1525.00	49.70	0.1378	1	0.1345
1, 100	1540.00	49.40	0.1507	1	0.1507
1, 101	1556.00	49.10	0.1474	1	0.1455
1, 102	1571.00	48.90	0.1481	1	0.1452
1, 103	1587.00	48.60	0.1382	1	0.1350
1, 104	1602.00	48.40	0.1421	1	0.1436
1, 105	1617.00	48.10	0.1456	1	0.1440
1, 106	1633.00	47.90	0.1500	1	0.1541
1, 107	1648.00	47.60	0.1648	1	0.1645
1, 108	1664.00	47.30	0.1664	1	0.1686

1, 109	1680.00	47.10	0.1765	1	0.1776
1, 110	1695.00	46.80	0.1741	1	0.1744
1, 111	1711.00	46.60	0.1795	1	0.1816
1, 112	1726.00	46.30	0.1876	1	0.1873
1, 113	1742.00	46.00	0.2012	1	0.1962
1, 114	1758.00	45.80	0.2197	1	0.2195
1, 115	1773.00	45.50	0.2084	1	0.2142
1, 116	1789.00	45.30	0.2256	1	0.2255
1, 117	1804.00	45.00	0.2341	1	0.2378
1, 118	1820.00	44.70	0.2686	1	0.2717
1, 119	1836.00	44.50	0.2984	1	0.2956
1, 120	1851.00	44.20	0.3124	1	0.3211
1, 121	1867.00	44.00	0.3459	1	0.3390
1, 122	1882.00	43.70	0.3923	1	0.3998
1, 123	1898.00	43.40	0.4449	1	0.4361
1, 124	1914.00	43.20	1.2140	1	1.2310
1, 125	1929.00	42.90	1.1280	1	1.1360
1, 126	1945.00	42.70	1.1760	1	1.1690
1, 127	1960.00	42.40	1.2060	1	1.2030
1, 128	1976.00	42.10	1.6570	1	1.6790
1, 129	1992.00	41.90	1.6940	1	1.7100
1, 130	2007.00	41.60	1.7670	1	1.7550
1, 131	2023.00	41.40	1.8690	1	1.8440
1, 132	2038.00	41.10	2.3220	1	2.3630
1, 133	2054.00	40.80	2.5330	1	2.5460
1, 134	2070.00	40.60	2.8170	1	2.7480
1, 135	2085.00	40.30	3.6070	1	3.3180
1, 136	2101.00	40.00	4.6800	1	4.7500
1, 137	2116.00	39.80	4.6170	1	4.6580
1, 138	2132.00	39.60	4.8760	1	4.7720
1, 139	2148.00	39.30	5.4000	1	5.3690
1, 140	2163.00	39.00	5.9360	1	5.9120
1, 141	2179.00	38.80	6.1070	1	6.0630
1, 142	2194.00	38.50	6.2290	1	6.1610
1, 143	2210.00	38.20	6.4170	1	6.4240
1, 144	2226.00	38.00	6.8370	1	6.8450
1, 145	2241.00	37.70	7.5050	1	7.5020
1, 146	2257.00	37.50	8.1400	1	8.1260
1, 147	2272.00	37.20	14.6300	1	16.2600
1, 148	2288.00	37.00	13.7200	1	13.4400
1, 149	2304.00	36.70	12.9500	1	13.2300
1, 150	2319.00	36.40	13.6600	1	13.7000
1, 151	2335.00	36.10	17.6300	1	19.6900
1, 152	2350.00	35.90	18.8500	1	20.6200

1, 153	2366.00	35.60	20.7700	1	18.0500
1, 154	2382.00	35.40	20.4000	1	18.7600
1, 155	2397.00	35.10	22.2600	1	22.3900
1, 156	2413.00	34.90	24.0900	1	22.3500
1, 157	2428.00	34.60	25.1600	1	25.0400
1, 158	2444.00	34.30	27.3000	1	27.3200
1, 159	2460.00	34.10	28.0800	1	27.9600
1, 160	2475.00	33.80	29.3200	1	29.1500
1, 161	2491.00	33.60	29.4900	1	28.6900
1, 162	2506.00	33.30	30.0600	1	30.0200
1, 163	2522.00	33.10	33.5500	1	33.6400
1, 164	2538.00	32.80	34.2100	1	34.1600
1, 165	2553.00	32.50	33.0100	1	27.6700
1, 166	2568.00	32.30	66.3500	1	59.8000
1, 167	2584.00	32.00	56.2700	1	58.9300
1, 168	2600.00	31.80	56.1200	1	56.0600
1, 169	2615.00	31.50	55.2200	1	49.7300
1, 170	2631.00	31.20	56.6700	1	57.5800
1, 171	2646.00	31.00	59.4400	1	59.7400
1, 172	2662.00	30.70	61.0100	1	61.2400
1, 173	2678.00	30.50	64.2300	1	64.6000
1, 174	2693.00	30.20	66.0800	1	65.9900

B1.3: Abu-attifel treated with 1000PPM ROA

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.20	75.00	0.0368	1	0.0134
1, 2	25.50	74.90	0.0412	1	0.0157
1, 3	40.80	74.70	0.0485	1	0.0201
1, 4	56.09	74.30	0.0502	1	0.0214
1, 5	71.40	74.00	0.0624	1	0.0314
1, 6	86.69	73.60	0.0673	1	0.0366
1, 7	102.00	73.30	0.0777	1	0.0508
1, 8	117.30	73.10	0.0856	1	0.0685
1, 9	132.60	72.90	0.0789	1	0.0529
1, 10	147.90	72.60	0.0824	1	0.0602
1, 11	163.20	72.40	0.0819	1	0.0591
1, 12	178.50	72.10	0.0788	1	0.0525
1, 13	193.80	71.80	0.0776	1	0.0507
1, 14	209.10	71.60	0.0775	1	0.0506
1, 15	224.40	71.30	0.0732	1	0.0438
1, 16	239.70	71.10	0.0708	1	0.0407

1, 17	255.00	70.80	0.0626	1	0.0315
1, 18	270.30	70.50	0.0421	1	0.0161
1, 19	285.60	70.30	0.0354	1	0.0128
1, 20	300.90	70.00	0.0446	1	0.0178
1, 21	316.50	69.80	0.0473	1	0.0194
1, 22	331.80	69.50	0.0469	1	0.0193
1, 23	347.40	69.30	0.0304	1	0.0103
1, 24	362.70	69.00	0.0323	1	0.0112
1, 25	378.30	68.80	0.0353	1	0.0126
1, 26	393.60	68.50	0.0278	1	0.0092
1, 27	409.20	68.20	0.0250	1	0.0080
1, 28	424.50	68.00	0.0318	1	0.0110
1, 29	440.10	67.70	0.0374	1	0.0137
1, 30	455.40	67.50	0.0454	1	0.0182
1, 31	471.00	67.20	0.0484	1	0.0202
1, 32	486.30	67.00	0.0459	1	0.0186
1, 33	501.90	66.70	0.0468	1	0.0192
1, 34	517.20	66.50	0.0452	1	0.0180
1, 35	532.80	66.20	0.0523	1	0.0230
1, 36	548.10	66.00	0.0681	1	0.0378
1, 37	563.40	65.70	0.0775	1	0.0506
1, 38	578.60	65.40	0.0865	1	0.0685
1, 39	594.00	65.20	0.0739	1	0.0454
1, 40	609.30	64.90	0.0730	1	0.0438
1, 41	624.50	64.60	0.0643	1	0.0333
1, 42	639.80	64.40	0.0661	1	0.0357
1, 43	655.10	64.20	0.0750	1	0.0466
1, 44	670.50	63.90	0.0730	1	0.0437
1, 45	685.70	63.60	0.0722	1	0.0427
1, 46	701.00	63.40	0.0749	1	0.0465
1, 47	716.30	63.10	0.0708	1	0.0415
1, 48	731.60	62.90	0.0703	1	0.0402
1, 49	747.00	62.60	0.0762	1	0.0490
1, 50	762.20	62.40	0.0741	1	0.0443
1, 51	777.50	62.10	0.0703	1	0.0403
1, 52	792.80	61.90	0.0755	1	0.0481
1, 53	808.10	61.60	0.0707	1	0.0400
1, 54	823.40	61.30	0.0681	1	0.0376
1, 55	838.70	61.10	0.0708	1	0.0409
1, 56	854.00	60.80	0.0682	1	0.0377
1, 57	869.40	60.60	0.0636	1	0.0326
1, 58	884.60	60.30	0.0987	1	0.1055
1, 59	899.90	60.10	0.0894	1	0.0774
1, 60	915.20	59.80	0.0870	1	0.0706

1, 61	930.50	59.50	0.0866	1	0.0684
1, 62	945.80	59.30	0.0770	1	0.0507
1, 63	961.10	59.10	0.0698	1	0.0396
1, 64	976.40	58.80	0.0731	1	0.0448
1, 65	991.70	58.50	0.0794	1	0.0556
1, 66	1007.00	58.30	0.0846	1	0.0645
1, 67	1022.00	58.10	0.0870	1	0.0708
1, 68	1038.00	57.80	0.0916	1	0.0832
1, 69	1053.00	57.50	0.0935	1	0.0900
1, 70	1068.00	57.30	0.1772	1	0.1726
1, 71	1084.00	57.00	0.1595	1	0.1587
1, 72	1099.00	56.70	0.1497	1	0.1496
1, 73	1115.00	56.50	0.1515	1	0.1547
1, 74	1130.00	56.20	0.1559	1	0.1636
1, 75	1146.00	56.00	0.1565	1	0.1582
1, 76	1161.00	55.70	0.1628	1	0.1631
1, 77	1177.00	55.40	0.1800	1	0.1792
1, 78	1192.00	55.20	0.2313	1	0.2281
1, 79	1208.00	54.90	0.2364	1	0.2361
1, 80	1224.00	54.60	0.2273	1	0.2316
1, 81	1239.00	54.40	0.1955	1	0.2004
1, 82	1255.00	54.10	0.2437	1	0.2321
1, 83	1270.00	53.90	0.2103	1	0.2087
1, 84	1286.00	53.70	0.1628	1	0.1586
1, 85	1301.00	53.40	0.3280	1	0.3173
1, 86	1317.00	53.10	0.2593	1	0.2605
1, 87	1332.00	52.90	0.1960	1	0.1993
1, 88	1348.00	52.60	0.2208	1	0.2182
1, 89	1363.00	52.30	0.1950	1	0.2026
1, 90	1379.00	52.10	0.1995	1	0.1995
1, 91	1394.00	51.80	0.1747	1	0.1712
1, 92	1410.00	51.60	0.1511	1	0.1509
1, 93	1425.00	51.40	0.3966	1	0.4153
1, 94	1441.00	51.10	0.2562	1	0.2506
1, 95	1456.00	50.90	0.1930	1	0.1967
1, 96	1471.00	50.60	0.1592	1	0.1608
1, 97	1487.00	50.10	0.2475	1	0.2501
1, 98	1502.00	49.90	0.2109	1	0.2097
1, 99	1518.00	49.70	0.2102	1	0.2131
1, 100	1533.00	49.50	0.1903	1	0.1862
1, 101	1549.00	49.30	0.1940	1	0.1976
1, 102	1565.00	49.00	0.1723	1	0.1718
1, 103	1580.00	48.80	0.1782	1	0.1834
1, 104	1596.00	48.50	0.1715	1	0.1741

1, 105	1612.00	48.20	0.1924	1	0.1937
1, 106	1627.00	47.90	0.1882	1	0.1867
1, 107	1643.00	47.70	0.1900	1	0.1875
1, 108	1658.00	47.40	0.2104	1	0.2125
1, 109	1674.00	47.20	0.2111	1	0.2094
1, 110	1690.00	46.90	0.1998	1	0.1991
1, 111	1705.00	46.70	0.1314	1	0.1317
1, 112	1720.00	46.40	0.1809	1	0.1845
1, 113	1736.00	46.10	0.1931	1	0.1907
1, 114	1751.00	45.90	0.2091	1	0.2086
1, 115	1767.00	45.60	0.2108	1	0.2152
1, 116	1783.00	45.40	0.2184	1	0.2221
1, 117	1798.00	45.10	0.2000	1	0.1998
1, 118	1814.00	44.90	0.2232	1	0.2232
1, 119	1829.00	44.60	0.2261	1	0.2230
1, 120	1845.00	44.30	0.2760	1	0.2719
1, 121	1860.00	44.10	0.3667	1	0.3729
1, 122	1876.00	43.80	0.3494	1	0.3556
1, 123	1892.00	43.50	0.3411	1	0.3350
1, 124	1907.00	43.30	0.3691	1	0.3664
1, 125	1923.00	43.00	0.3923	1	0.3987
1, 126	1938.00	42.70	0.4189	1	0.4209
1, 127	1954.00	42.50	0.4961	1	0.4823
1, 128	1970.00	42.20	0.8059	1	0.8103
1, 129	1985.00	42.00	0.8542	1	0.8703
1, 130	2001.00	41.70	0.8579	1	0.8633
1, 131	2017.00	41.50	0.9108	1	0.9253
1, 132	2032.00	41.20	0.9501	1	0.9399
1, 133	2048.00	40.90	0.9897	1	1.0050
1, 134	2063.00	40.70	0.9631	1	0.9660
1, 135	2079.00	40.40	1.4140	1	1.3330
1, 136	2095.00	40.20	1.4820	1	1.4920
1, 137	2110.00	39.90	1.6770	1	1.6870
1, 138	2126.00	39.70	1.8330	1	1.8350
1, 139	2141.00	39.40	2.0870	1	2.0490
1, 140	2157.00	39.10	2.2500	1	2.2580
1, 141	2172.00	38.90	2.5290	1	2.4840
1, 142	2187.00	38.60	2.8080	1	2.8500
1, 143	2203.00	38.40	3.1930	1	3.2310
1, 144	2219.00	38.10	3.8150	1	3.8170
1, 145	2234.00	37.80	4.5660	1	4.5170
1, 146	2250.00	37.60	5.2020	1	5.3000
1, 147	2265.00	37.30	6.1260	1	6.1680
1, 148	2281.00	37.10	7.6530	1	7.6510

1, 149	2297.00	36.80	8.1950	1	8.3170
1, 150	2312.00	36.50	9.4050	1	9.3070
1, 151	2328.00	36.30	16.7700	1	16.8300
1, 152	2343.00	36.00	16.6400	1	16.7300
1, 153	2359.00	35.80	17.1100	1	17.2700
1, 154	2374.00	35.50	17.4600	1	17.4200
1, 155	2390.00	35.30	18.4700	1	18.2500
1, 156	2405.00	35.00	19.1400	1	19.0400
1, 157	2421.00	34.70	21.2800	1	21.0700
1, 158	2436.00	34.50	22.8300	1	22.5900
1, 159	2452.00	34.20	23.6800	1	23.6700
1, 160	2468.00	33.90	24.5900	1	24.5800
1, 161	2483.00	33.70	26.5000	1	26.5100
1, 162	2499.00	33.40	34.9800	1	35.9700
1, 163	2514.00	33.20	49.3900	1	49.9900
1, 164	2529.00	32.90	45.6800	1	45.3500
1, 165	2545.00	32.70	48.2600	1	51.7800
1, 166	2561.00	32.40	61.3800	1	51.3700
1, 167	2576.00	32.20	66.5400	1	69.3200
1, 168	2592.00	31.90	63.2000	1	63.3300
1, 169	2607.00	31.60	63.8600	1	63.8700
1, 170	2623.00	31.40	73.3800	1	73.5400
1, 171	2639.00	31.10	72.1700	1	72.1500
1, 172	2654.00	30.80	70.7000	1	70.8800
1, 173	2670.00	30.60	69.9800	1	70.0300
1, 174	2685.00	30.30	73.9900	1	74.4000
1, 175	2701.00	30.10	67.0200	1	67.0400

B1.4: Abu-attifel treated with 1000PPM PPD

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.30	75.00	0.0085	1	0.0023
1, 2	25.61	74.90	0.0023	1	0.0006
1, 3	41.21	74.60	0.0093	1	0.0026
1, 4	56.80	74.30	0.0199	1	0.0061
1, 5	72.09	73.90	0.0260	1	0.0085
1, 6	87.41	73.60	0.0230	1	0.0073
1, 7	103.00	73.30	0.0124	1	0.0035
1, 8	118.60	73.00	0.0039	1	0.0010
1, 9	133.90	72.80	-0.0022	1	0.0006
1, 10	149.20	72.60	-0.0034	1	0.0008
1, 11	164.80	72.30	0.0034	1	0.0009

1, 12	180.40	72.10	-0.0081	1	0.0020
1, 13	195.70	71.80	-0.0125	1	0.0030
1, 14	211.00	71.60	-0.0036	1	0.0009
1, 15	226.30	71.30	0.0105	1	0.0030
1, 16	241.60	71.10	0.0192	1	0.0058
1, 17	257.20	70.80	0.0225	1	0.0071
1, 18	272.50	70.50	0.0178	1	0.0054
1, 19	288.10	70.30	0.0234	1	0.0075
1, 20	303.40	70.00	0.0215	1	0.0067
1, 21	318.70	69.70	0.0305	1	0.0104
1, 22	334.00	69.50	0.0372	1	0.0136
1, 23	349.60	69.20	0.0372	1	0.0136
1, 24	364.90	69.00	0.0290	1	0.0097
1, 25	380.20	68.70	0.0201	1	0.0062
1, 26	395.50	68.50	0.0100	1	0.0028
1, 27	410.80	68.20	0.0035	1	0.0009
1, 28	426.40	68.00	0.0018	1	0.0005
1, 29	441.70	67.70	-0.0013	1	0.0003
1, 30	457.30	67.40	-0.0071	1	0.0017
1, 31	472.60	67.20	-0.0072	1	0.0018
1, 32	488.20	66.90	-0.0004	1	0.0001
1, 33	503.80	66.70	0.0090	1	0.0025
1, 34	519.10	66.40	0.0115	1	0.0033
1, 35	534.70	66.10	0.0118	1	0.0034
1, 36	550.00	65.90	0.0062	1	0.0017
1, 37	565.60	65.60	0.0028	1	0.0007
1, 38	581.20	65.40	0.0146	1	0.0043
1, 39	596.80	65.10	0.0243	1	0.0078
1, 40	612.40	64.90	0.0291	1	0.0098
1, 41	627.70	64.60	0.0275	1	0.0091
1, 42	643.30	64.30	0.0203	1	0.0063
1, 43	658.90	64.10	0.0160	1	0.0048
1, 44	674.50	63.80	0.0156	1	0.0046
1, 45	690.10	63.60	0.0126	1	0.0036
1, 46	705.40	63.30	0.0184	1	0.0056
1, 47	721.00	63.10	0.0239	1	0.0076
1, 48	736.30	62.80	0.0265	1	0.0087
1, 49	751.50	62.50	0.0295	1	0.0100
1, 50	766.80	62.30	0.0373	1	0.0137
1, 51	782.10	62.00	0.0483	1	0.0201
1, 52	797.40	61.80	0.0582	1	0.0276
1, 53	812.70	61.50	0.0670	1	0.0365
1, 54	828.00	61.30	0.0706	1	0.0408
1, 55	843.30	61.00	0.0783	1	0.0519

1, 56	858.60	60.70	0.0838	1	0.0627
1, 57	873.90	60.50	0.0920	1	0.0843
1, 58	889.20	60.20	0.1258	1	0.1262
1, 59	904.50	60.00	0.1185	1	0.1190
1, 60	919.80	59.70	0.1222	1	0.1235
1, 61	935.10	59.50	0.1298	1	0.1268
1, 62	950.40	59.20	0.1190	1	0.1202
1, 63	965.70	58.90	0.1211	1	0.1240
1, 64	981.00	58.70	0.1329	1	0.1334
1, 65	996.30	58.40	0.1569	1	0.1561
1, 66	1012.00	58.20	0.1880	1	0.1904
1, 67	1028.00	57.90	0.2046	1	0.2059
1, 68	1043.00	57.70	0.2030	1	0.2056
1, 69	1058.00	57.40	0.2271	1	0.2276
1, 70	1074.00	57.20	0.2826	1	0.2857
1, 71	1089.00	56.90	0.2487	1	0.2464
1, 72	1105.00	56.60	0.2461	1	0.2505
1, 73	1120.00	56.40	0.2748	1	0.2716
1, 74	1136.00	56.10	0.2709	1	0.2695
1, 75	1151.00	55.90	0.2557	1	0.2534
1, 76	1167.00	55.60	0.2635	1	0.2644
1, 77	1183.00	55.30	0.2768	1	0.2813
1, 78	1198.00	55.10	0.2920	1	0.2862
1, 79	1214.00	54.80	0.2751	1	0.2775
1, 80	1229.00	54.60	0.2753	1	0.2781
1, 81	1245.00	54.30	0.2554	1	0.2536
1, 82	1261.00	54.00	0.2374	1	0.2378
1, 83	1276.00	53.80	0.2325	1	0.2309
1, 84	1292.00	53.50	0.2218	1	0.2250
1, 85	1307.00	53.30	0.3658	1	0.3674
1, 86	1323.00	53.00	0.2884	1	0.2851
1, 87	1338.00	52.80	0.2281	1	0.2323
1, 88	1354.00	52.50	0.2158	1	0.2168
1, 89	1370.00	52.20	0.1853	1	0.1833
1, 90	1385.00	52.00	0.1477	1	0.1505
1, 91	1401.00	51.70	0.1330	1	0.1369
1, 92	1416.00	51.50	0.1381	1	0.1427
1, 93	1431.00	51.20	0.1305	1	0.1304
1, 94	1447.00	51.00	0.1311	1	0.1279
1, 95	1462.00	50.70	0.1249	1	0.1206
1, 96	1477.00	50.30	0.1369	1	0.1350
1, 97	1492.00	50.00	0.1441	1	0.1424
1, 98	1508.00	49.80	0.1520	1	0.1470
1, 99	1523.00	49.60	0.1424	1	0.1410

1, 100	1538.00	49.40	0.1421	1	0.1452
1, 101	1554.00	49.20	0.1141	1	0.1155
1, 102	1569.00	49.00	0.1239	1	0.1245
1, 103	1584.00	48.70	0.1170	1	0.1214
1, 104	1600.00	48.40	0.1200	1	0.1173
1, 105	1615.00	48.20	0.1373	1	0.1315
1, 106	1630.00	47.90	0.1599	1	0.1593
1, 107	1646.00	47.60	0.1814	1	0.1794
1, 108	1661.00	47.40	0.2627	1	0.2548
1, 109	1677.00	47.10	0.2459	1	0.2419
1, 110	1692.00	46.80	0.2217	1	0.2300
1, 111	1708.00	46.60	0.2444	1	0.2465
1, 112	1723.00	46.30	0.2698	1	0.2536
1, 113	1739.00	46.10	0.2635	1	0.2660
1, 114	1754.00	45.80	0.2501	1	0.2516
1, 115	1769.00	45.60	0.2338	1	0.2326
1, 116	1785.00	45.30	0.2774	1	0.2789
1, 117	1801.00	45.10	0.3290	1	0.3273
1, 118	1816.00	44.80	0.3729	1	0.3737
1, 119	1832.00	44.50	0.4237	1	0.4237
1, 120	1847.00	44.30	0.6442	1	0.6459
1, 121	1863.00	44.00	0.6530	1	0.6623
1, 122	1879.00	43.80	0.6500	1	0.6621
1, 123	1894.00	43.50	0.6724	1	0.6794
1, 124	1909.00	43.20	0.7852	1	0.7903
1, 125	1925.00	43.00	0.7177	1	0.7076
1, 126	1941.00	42.70	0.7382	1	0.7328
1, 127	1956.00	42.50	0.7376	1	0.7388
1, 128	1972.00	42.20	0.8661	1	0.8613
1, 129	1987.00	41.90	0.8310	1	0.8371
1, 130	2003.00	41.70	0.8332	1	0.8324
1, 131	2019.00	41.40	0.8822	1	0.8937
1, 132	2034.00	41.10	0.9617	1	0.9597
1, 133	2050.00	40.90	1.0840	1	1.0850
1, 134	2065.00	40.60	1.1980	1	1.2110
1, 135	2081.00	40.40	1.9120	1	1.7620
1, 136	2096.00	40.10	1.8290	1	1.8280
1, 137	2112.00	39.90	1.8410	1	1.8720
1, 138	2128.00	39.60	2.0330	1	2.0520
1, 139	2143.00	39.30	3.1260	1	3.5400
1, 140	2159.00	39.10	3.1980	1	3.2330
1, 141	2174.00	38.80	3.2810	1	3.3050
1, 142	2190.00	38.60	3.1430	1	3.1410
1, 143	2206.00	38.30	3.3030	1	3.2870

1, 144	2221.00	38.10	3.7390	1	3.7550
1, 145	2236.00	37.80	4.0140	1	3.9470
1, 146	2252.00	37.50	4.1540	1	4.1700
1, 147	2268.00	37.30	4.6580	1	4.6670
1, 148	2283.00	37.00	5.5120	1	5.3810
1, 149	2299.00	36.80	5.6470	1	5.5720
1, 150	2314.00	36.50	6.6100	1	6.6760
1, 151	2329.00	36.30	10.1900	1	10.6900
1, 152	2345.00	36.00	10.8000	1	10.9500
1, 153	2361.00	35.70	10.3600	1	10.3600
1, 154	2376.00	35.50	10.3800	1	10.2300
1, 155	2392.00	35.20	11.3800	1	11.2700
1, 156	2407.00	34.90	12.2100	1	12.1200
1, 157	2423.00	34.70	13.1400	1	13.2200
1, 158	2438.00	34.40	14.1100	1	14.0000
1, 159	2454.00	34.20	15.2200	1	15.0600
1, 160	2470.00	33.90	16.4800	1	16.3700
1, 161	2485.00	33.60	16.8900	1	16.8700
1, 162	2501.00	33.40	17.9900	1	18.0900
1, 163	2516.00	33.10	19.3300	1	19.1700
1, 164	2532.00	32.90	20.5700	1	20.8500
1, 165	2548.00	32.60	21.4700	1	21.7600
1, 166	2563.00	32.40	23.2000	1	23.4300
1, 167	2578.00	32.10	22.5500	1	26.2600
1, 168	2594.00	31.80	25.7100	1	25.7000
1, 169	2609.00	31.60	28.9100	1	29.2700
1, 170	2625.00	31.30	69.8900	1	72.8300
1, 171	2640.00	31.10	54.1400	1	54.8800
1, 172	2656.00	30.80	51.7100	1	52.1000
1, 173	2671.00	30.50	50.2900	1	50.1300
1, 174	2687.00	30.30	54.5100	1	54.7900

B1.5: Abu-attifel treated with 20% Sertica

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.05	75.00	0.1234	1	0.0774
1, 2	25.63	75.00	0.1073	1	0.0820
1, 3	40.95	74.70	0.0297	1	0.0103
1, 4	56.25	74.40	0.0068	1	0.0019
1, 5	71.84	74.00	0.3293	1	0.2006
1, 6	87.16	73.60	0.0051	1	0.0014
1, 7	102.70	73.30	0.0309	1	0.0103

1, 8	118.00	73.00	0.0692	1	0.0355
1, 9	133.40	72.80	0.0308	1	0.0106
1, 10	148.60	72.60	0.0094	1	0.0027
1, 11	163.90	72.30	0.0210	1	0.0065
1, 12	179.20	72.10	0.0442	1	0.0181
1, 13	194.50	71.90	0.0241	1	0.0078
1, 14	209.80	71.60	0.0296	1	0.0100
1, 15	225.10	71.30	0.0291	1	0.0098
1, 16	240.40	71.10	0.0257	1	0.0085
1, 17	255.70	70.80	0.0252	1	0.0083
1, 18	271.00	70.50	0.0255	1	0.0084
1, 19	286.40	70.30	0.2782	1	0.3524
1, 20	301.90	70.00	0.0596	1	0.0298
1, 21	317.20	69.80	0.0777	1	0.0518
1, 22	332.50	69.60	0.0882	1	0.0693
1, 23	347.80	69.30	0.1883	1	0.1372
1, 24	363.40	69.00	3.4740	1	2.5840
1, 25	378.70	68.80	2.5990	1	2.7590
1, 26	394.30	68.50	11.4300	1	11.1600
1, 27	409.90	68.20	22.6900	1	22.7400
1, 28	425.50	68.00	34.5100	1	33.5900
1, 29	441.10	67.70	1.5620	1	0.2559
1, 30	456.40	67.50	0.2756	1	0.2929
1, 31	472.00	67.20	27.1100	1	29.3600
1, 32	487.60	66.90	0.3053	1	0.3627
1, 33	502.90	66.70	2.1130	1	1.8040
1, 34	518.20	66.40	55.9800	1	53.7700
1, 35	533.50	66.20	80.2900	1	80.4400
1, 36	548.80	65.90	99.3900	1	99.8300
1, 37	564.10	65.60	109.4000	1	109.1000
1, 38	579.40	65.40	84.7100	1	83.0600
1, 39	594.70	65.20	45.3300	1	45.8500
1, 40	610.00	64.90	36.7400	1	35.7100
1, 41	625.30	64.60	40.8300	1	41.1900
1, 42	640.60	64.40	25.9500	1	26.9800
1, 43	655.90	64.10	17.2300	1	17.2300
1, 44	671.20	63.90	10.2400	1	10.2700
1, 45	686.80	63.60	0.9779	1	0.7575
1, 46	702.10	63.30	0.2370	1	0.2499
1, 47	717.70	63.20	0.0411	1	0.0154
1, 48	733.00	62.90	0.0346	1	0.0122
1, 49	748.30	62.60	0.0426	1	0.0162
1, 51	778.90	62.10	1.6420	1	1.6670
1, 52	794.50	61.80	0.2392	1	0.2434

1, 53	810.10	61.60	1.3550	1	1.1790
1, 54	825.40	61.30	0.1010	1	0.0880
1, 55	840.70	61.10	0.8732	1	0.8768
1, 56	856.00	60.80	0.2161	1	0.1906
1, 57	871.30	60.60	0.2208	1	0.2221
1, 58	886.60	60.30	0.1024	1	0.1078
1, 59	901.90	60.00	0.0862	1	0.0661
1, 60	917.20	59.80	0.1742	1	0.1275
1, 61	932.50	59.50	0.1048	1	0.0944
1, 62	947.80	59.30	0.0779	1	0.0518
1, 63	963.10	59.00	0.0735	1	0.0434
1, 64	978.40	58.80	0.0647	1	0.0332
1, 65	993.70	58.50	0.0634	1	0.0323
1, 66	1009.00	58.20	0.0697	1	0.0387
1, 67	1024.00	58.00	0.0728	1	0.0436
1, 68	1040.00	57.80	0.0824	1	0.0593
1, 69	1055.00	57.50	0.0859	1	0.0660
1, 70	1070.00	57.30	0.0934	1	0.0870
1, 71	1085.00	57.00	0.0936	1	0.0882
1, 72	1101.00	56.70	0.0937	1	0.0885
1, 73	1116.00	56.40	0.0969	1	0.0999
1, 74	1131.00	56.20	0.0966	1	0.0953
1, 75	1147.00	55.90	0.1028	1	0.1071
1, 76	1162.00	55.70	0.1070	1	0.1081
1, 77	1177.00	55.50	0.1087	1	0.1105
1, 78	1193.00	55.20	0.1127	1	0.1130
1, 79	1208.00	54.90	0.1186	1	0.1200
1, 80	1223.00	54.70	0.1126	1	0.1104
1, 81	1238.00	54.40	0.1101	1	0.1117
1, 82	1254.00	54.10	0.1177	1	0.1187
1, 83	1269.00	53.90	0.1295	1	0.1319
1, 84	1284.00	53.60	0.1412	1	0.1437
1, 85	1300.00	53.40	0.1630	1	0.1678
1, 86	1315.00	53.20	0.1852	1	0.1842
1, 87	1331.00	52.90	0.1992	1	0.1961
1, 88	1346.00	52.60	0.2185	1	0.2184
1, 89	1362.00	52.30	0.2360	1	0.2378
1, 90	1377.00	52.10	0.2539	1	0.2554
1, 91	1393.00	51.90	0.2802	1	0.2825
1, 92	1408.00	51.60	0.2958	1	0.2920
1, 93	1424.00	51.30	0.2642	1	0.2671
1, 94	1439.00	51.10	0.3046	1	0.3070
1, 95	1455.00	50.80	0.3293	1	0.3344
1, 96	1471.00	50.60	0.3552	1	0.3603

1, 97	1486.00	50.20	0.3374	1	0.3389
1, 98	1502.00	49.90	0.3581	1	0.3641
1, 99	1517.00	49.70	0.3873	1	0.3931
1, 100	1532.00	49.50	0.4303	1	0.4260
1, 101	1548.00	49.30	0.6642	1	0.7171
1, 102	1563.00	49.00	2.1420	1	2.1380
1, 103	1579.00	48.80	3.0350	1	3.0320
1, 104	1594.00	48.50	5.2150	1	5.1070
1, 105	1610.00	48.20	1.3840	1	1.3810
1, 106	1625.00	48.00	0.7173	1	0.7202
1, 107	1641.00	47.70	0.6533	1	0.6469
1, 108	1656.00	47.50	0.7302	1	0.7265
1, 109	1672.00	47.20	0.6807	1	0.7321
1, 110	1688.00	46.90	0.7389	1	0.7298
1, 111	1703.00	46.70	0.7321	1	0.7346
1, 112	1719.00	46.40	1.9580	1	1.0910
1, 113	1734.00	46.20	0.8813	1	0.8072
1, 114	1750.00	45.90	0.9721	1	0.9518
1, 115	1765.00	45.60	0.7051	1	0.6982
1, 116	1781.00	45.40	1.3470	1	1.3870
1, 117	1796.00	45.10	1.3900	1	1.2960
1, 118	1811.00	44.90	1.2060	1	1.2240
1, 119	1827.00	44.60	2.7510	1	2.6760
1, 120	1843.00	44.40	0.9082	1	0.9143
1, 121	1858.00	44.10	0.9186	1	0.9179
1, 122	1874.00	43.80	0.9345	1	0.9427
1, 123	1889.00	43.60	0.9557	1	0.9856
1, 124	1905.00	43.30	1.0570	1	1.0490
1, 125	1921.00	43.00	1.0490	1	1.0360
1, 126	1936.00	42.80	1.0680	1	1.0730
1, 127	1952.00	42.50	1.0750	1	1.0610
1, 128	1967.00	42.30	1.2170	1	1.2290
1, 129	1983.00	42.00	1.1930	1	1.2000
1, 130	1999.00	41.80	1.2480	1	1.1910
1, 131	2014.00	41.50	1.2370	1	1.2610
1, 132	2030.00	41.20	1.2810	1	1.3110
1, 133	2045.00	41.00	1.3510	1	1.3620
1, 134	2061.00	40.70	1.4980	1	1.5160
1, 135	2076.00	40.50	1.6460	1	1.6330
1, 136	2092.00	40.20	1.9150	1	1.9040
1, 137	2107.00	39.90	2.3390	1	2.3520
1, 138	2123.00	39.70	2.5880	1	2.5960
1, 139	2138.00	39.40	2.5790	1	2.5070
1, 140	2154.00	39.20	2.9280	1	2.8850

1, 141	2169.00	38.90	3.1590	1	3.1870
1, 142	2184.00	38.70	3.3740	1	3.4580
1, 143	2200.00	38.40	3.6420	1	3.8600
1, 144	2216.00	38.10	4.5200	1	4.5630
1, 145	2231.00	37.90	5.0870	1	5.0300
1, 146	2247.00	37.60	5.8360	1	5.7760
1, 147	2262.00	37.40	6.9170	1	7.2530
1, 148	2278.00	37.10	7.2240	1	7.2690
1, 149	2293.00	36.80	7.9370	1	8.0080
1, 150	2308.00	36.60	9.0570	1	9.0190
1, 151	2324.00	36.30	10.4700	1	10.6100
1, 152	2339.00	36.10	12.0400	1	12.1500
1, 153	2355.00	35.80	14.7800	1	14.7700
1, 154	2371.00	35.50	16.3200	1	16.4100
1, 155	2386.00	35.30	25.6600	1	28.2600
1, 156	2401.00	35.10	27.8600	1	28.1800
1, 157	2417.00	34.80	39.5200	1	39.8700
1, 158	2432.00	34.50	38.4600	1	38.4900
1, 159	2448.00	34.30	95.3200	1	92.8400
1, 160	2463.00	34.00	185.4000	1	188.0000
1, 161	2479.00	33.80	204.6000	1	199.3000
1, 162	2494.00	33.50	198.6000	1	197.8000
1, 163	2509.00	33.20	118.9000	1	127.0000
1, 164	2524.00	33.00	77.4000	1	77.3000
1, 165	2540.00	32.70	85.7400	1	85.5800
1, 166	2555.00	32.50	109.7000	1	115.4000
1, 167	2571.00	32.20	130.7000	1	143.7000
1, 168	2586.00	32.00	86.5600	1	91.3300
1, 169	2602.00	31.70	77.0100	1	77.1000
1, 170	2617.00	31.50	75.5600	1	73.9500
1, 171	2633.00	31.20	72.4400	1	72.3600
1, 172	2648.00	31.00	76.8000	1	76.6200
1, 173	2664.00	30.70	77.6300	1	78.2100
1, 174	2680.00	30.40	72.8300	1	72.4400
1, 175	2695.00	30.20	69.7800	1	69.2900

B2 at shear rate 10s-1

B2.1: Abu-attifel untreated

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas	Target Shear Rate 1/s
1, 1	10.32	85.00	0.029	9.6	0.0030	10

1, 2	25.33	84.80	0.029	9.9	0.0029	10
1, 3	40.33	84.60	0.029	10.0	0.0029	10
1, 4	55.31	84.30	0.028	10.0	0.0028	10
1, 5	70.31	83.90	0.028	10.0	0.0028	10
1, 6	85.31	83.70	0.027	10.0	0.0028	10
1, 7	100.30	83.40	0.028	10.0	0.0028	10
1, 8	115.30	83.10	0.028	10.0	0.0028	10
1, 9	130.30	82.90	0.028	10.0	0.0028	10
1, 10	145.30	82.70	0.029	10.0	0.0029	10
1, 11	160.30	82.40	0.027	10.0	0.0027	10
1, 12	175.30	82.10	0.028	10.0	0.0028	10
1, 13	190.30	81.90	0.028	10.0	0.0028	10
1, 14	205.30	81.70	0.028	10.0	0.0029	10
1, 15	220.30	81.40	0.029	10.0	0.0029	10
1, 16	235.30	81.10	0.029	10.0	0.0029	10
1, 17	250.30	80.90	0.029	10.0	0.0029	10
1, 18	265.30	80.60	0.030	10.0	0.0030	10
1, 19	280.30	80.40	0.030	10.0	0.0030	10
1, 20	295.30	80.10	0.029	10.0	0.0029	10
1, 21	310.30	79.80	0.030	10.0	0.0030	10
1, 22	325.30	79.60	0.030	10.0	0.0030	10
1, 23	340.30	79.40	0.030	10.0	0.0030	10
1, 24	355.30	79.10	0.029	10.0	0.0029	10
1, 25	370.30	78.90	0.028	10.0	0.0029	10
1, 26	385.30	78.60	0.029	10.0	0.0029	10
1, 27	400.30	78.40	0.029	10.0	0.0029	10
1, 28	415.30	78.10	0.029	10.0	0.0029	10
1, 29	430.30	77.90	0.028	10.0	0.0028	10
1, 30	445.30	77.60	0.031	10.0	0.0031	10
1, 31	460.30	77.40	0.029	10.0	0.0029	10
1, 32	475.30	77.20	0.030	10.0	0.0031	10
1, 33	490.30	76.90	0.032	10.0	0.0032	10
1, 34	505.30	76.60	0.033	10.0	0.0033	10
1, 35	520.30	76.40	0.032	10.0	0.0032	10
1, 36	535.30	76.10	0.032	10.0	0.0032	10
1, 37	550.30	75.90	0.035	10.0	0.0035	10
1, 38	565.30	75.60	0.033	10.0	0.0033	10
1, 39	580.30	75.40	0.032	10.0	0.0032	10
1, 40	595.30	75.10	0.033	10.0	0.0033	10
1, 41	610.30	74.90	0.033	10.0	0.0033	10
1, 42	625.30	74.60	0.034	10.0	0.0034	10
1, 43	640.30	74.30	0.033	10.0	0.0033	10
1, 44	655.30	74.10	0.035	10.0	0.0035	10
1, 45	670.30	73.90	0.035	10.0	0.0035	10

1, 46	685.30	73.60	0.034	10.0	0.0034	10
1, 47	700.30	73.40	0.034	10.0	0.0034	10
1, 48	715.30	73.20	0.035	10.0	0.0035	10
1, 49	730.30	72.90	0.037	10.0	0.0037	10
1, 50	745.30	72.60	0.038	10.0	0.0038	10
1, 51	760.30	72.40	0.037	10.0	0.0037	10
1, 52	775.30	72.10	0.039	10.0	0.0039	10
1, 53	790.30	71.90	0.040	10.0	0.0040	10
1, 54	805.30	71.70	0.039	10.0	0.0039	10
1, 55	820.30	71.40	0.040	10.0	0.0040	10
1, 56	835.30	71.10	0.041	10.0	0.0041	10
1, 57	850.30	70.90	0.041	10.0	0.0041	10
1, 58	865.30	70.60	0.040	10.0	0.0040	10
1, 59	880.30	70.40	0.041	10.0	0.0041	10
1, 60	895.30	70.10	0.039	10.0	0.0039	10
1, 61	910.30	69.80	0.039	10.0	0.0039	10
1, 62	925.30	69.60	0.041	10.0	0.0041	10
1, 63	940.20	69.40	0.042	10.0	0.0042	10
1, 64	955.30	69.10	0.041	10.0	0.0041	10
1, 65	970.20	68.90	0.041	10.0	0.0041	10
1, 66	985.30	68.60	0.042	10.0	0.0042	10
1, 67	1000.00	68.40	0.044	10.0	0.0044	10
1, 68	1015.00	68.10	0.042	10.0	0.0042	10
1, 69	1030.00	67.90	0.042	10.0	0.0042	10
1, 70	1045.00	67.60	0.043	10.0	0.0043	10
1, 71	1060.00	67.40	0.044	10.0	0.0044	10
1, 72	1075.00	67.10	0.043	10.0	0.0043	10
1, 73	1090.00	66.90	0.043	10.0	0.0043	10
1, 74	1105.00	66.60	0.045	10.0	0.0045	10
1, 75	1120.00	66.40	0.045	10.0	0.0045	10
1, 76	1135.00	66.10	0.044	10.0	0.0044	10
1, 77	1150.00	65.90	0.045	10.0	0.0045	10
1, 78	1165.00	65.60	0.045	10.0	0.0045	10
1, 79	1180.00	65.40	0.046	10.0	0.0046	10
1, 80	1195.00	65.10	0.046	10.0	0.0046	10
1, 81	1210.00	64.90	0.048	10.0	0.0048	10
1, 82	1225.00	64.70	0.049	10.0	0.0049	10
1, 83	1240.00	64.40	0.050	10.0	0.0050	10
1, 84	1255.00	64.20	0.051	10.0	0.0051	10
1, 85	1270.00	63.90	0.053	10.0	0.0053	10
1, 86	1285.00	63.60	0.054	10.0	0.0054	10
1, 87	1300.00	63.40	0.055	10.0	0.0055	10
1, 88	1315.00	63.10	0.058	10.0	0.0058	10
1, 89	1330.00	62.90	0.061	10.0	0.0061	10

1, 90	1345.00	62.60	0.064	10.0	0.0064	10
1, 91	1360.00	62.40	0.068	10.0	0.0068	10
1, 92	1375.00	62.10	0.073	10.0	0.0073	10
1, 93	1390.00	61.90	0.082	10.0	0.0082	10
1, 94	1405.00	61.60	0.086	10.0	0.0086	10
1, 95	1420.00	61.40	0.094	10.0	0.0094	10
1, 96	1435.00	61.10	0.106	10.0	0.0106	10
1, 97	1450.00	60.90	0.117	9.9	0.0118	10
1, 98	1465.00	60.60	0.131	10.0	0.0130	10
1, 99	1480.00	60.40	0.151	9.9	0.0152	10
1, 100	1495.00	60.10	0.173	10.0	0.0173	10
1, 101	1510.00	59.90	0.196	10.1	0.0194	10
1, 102	1525.00	59.60	0.219	10.0	0.0219	10
1, 103	1540.00	59.40	0.246	10.0	0.0245	10
1, 104	1555.00	59.10	0.273	10.1	0.0272	10
1, 105	1570.00	58.90	0.301	10.1	0.0298	10
1, 106	1585.00	58.60	0.326	10.0	0.0327	10
1, 107	1600.00	58.40	0.353	10.0	0.0353	10
1, 108	1615.00	58.10	0.379	10.0	0.0378	10
1, 109	1630.00	57.90	0.402	10.0	0.0404	10
1, 110	1645.00	57.60	0.424	9.9	0.0427	10
1, 111	1660.00	57.40	0.452	10.0	0.0452	10
1, 112	1675.00	57.10	0.475	10.0	0.0473	10
1, 113	1690.00	56.90	0.498	10.0	0.0499	10
1, 114	1705.00	56.60	0.518	9.9	0.0521	10
1, 115	1720.00	56.40	0.543	10.0	0.0542	10
1, 116	1735.00	56.10	0.561	10.0	0.0562	10
1, 117	1750.00	55.90	0.582	10.0	0.0583	10
1, 118	1765.00	55.60	0.602	10.0	0.0600	10
1, 119	1780.00	55.40	0.620	10.1	0.0616	10
1, 120	1795.00	55.20	0.635	10.0	0.0634	10
1, 121	1810.00	54.90	0.651	10.0	0.0653	10
1, 122	1825.00	54.60	0.670	9.9	0.0674	10
1, 123	1840.00	54.40	0.687	10.0	0.0689	10
1, 124	1855.00	54.10	0.704	10.0	0.0705	10
1, 125	1870.00	53.90	0.719	10.0	0.0721	10
1, 126	1885.00	53.60	0.737	10.0	0.0740	10
1, 127	1900.00	53.40	0.757	10.1	0.0752	10
1, 128	1915.00	53.10	0.769	10.0	0.0771	10
1, 129	1930.00	52.90	0.786	10.0	0.0788	10
1, 130	1945.00	52.60	0.801	10.0	0.0803	10
1, 131	1960.00	52.40	0.817	10.0	0.0817	10
1, 132	1975.00	52.20	0.834	10.0	0.0834	10
1, 133	1990.00	51.90	0.851	10.0	0.0853	10

1, 134	2005.00	51.70	0.863	10.0	0.0863	10
1, 135	2020.00	51.40	0.882	10.1	0.0875	10
1, 136	2035.00	51.10	0.895	10.0	0.0897	10
1, 137	2050.00	50.90	0.911	10.0	0.0914	10
1, 138	2065.00	50.60	0.931	10.1	0.0924	10
1, 139	2080.00	50.40	0.941	10.0	0.0942	10
1, 140	2095.00	50.10	0.956	10.0	0.0960	10
1, 141	2110.00	49.90	0.978	10.1	0.0972	10
1, 142	2125.00	49.60	0.988	10.0	0.0989	10
1, 143	2140.00	49.40	1.005	10.0	0.1007	10
1, 144	2155.00	49.10	1.027	10.1	0.1019	10
1, 145	2170.00	48.90	1.038	10.0	0.1041	10
1, 146	2185.00	48.60	1.056	10.0	0.1055	10
1, 147	2200.00	48.40	1.072	10.0	0.1073	10
1, 148	2215.00	48.20	1.088	10.0	0.1092	10
1, 149	2230.00	47.90	1.112	10.1	0.1103	10
1, 150	2245.00	47.60	1.123	10.0	0.1124	10
1, 151	2260.00	47.40	1.144	10.0	0.1147	10
1, 152	2275.00	47.10	1.168	10.1	0.1160	10
1, 153	2290.00	46.90	1.184	10.0	0.1186	10
1, 154	2305.00	46.60	1.201	10.0	0.1203	10
1, 155	2320.00	46.40	1.224	10.0	0.1227	10
1, 156	2335.00	46.10	1.251	10.0	0.1246	10
1, 157	2350.00	45.90	1.268	10.0	0.1270	10
1, 158	2365.00	45.60	1.292	10.0	0.1293	10
1, 159	2380.00	45.40	1.323	10.1	0.1313	10
1, 160	2395.00	45.10	1.344	10.0	0.1347	10
1, 161	2410.00	44.90	1.372	10.0	0.1375	10
1, 162	2425.00	44.60	1.400	10.0	0.1404	10
1, 163	2440.00	44.40	1.430	10.0	0.1434	10
1, 164	2455.00	44.10	1.464	10.0	0.1463	10
1, 165	2470.00	43.90	1.503	10.1	0.1494	10
1, 166	2485.00	43.70	1.535	10.0	0.1538	10
1, 167	2500.00	43.40	1.578	10.1	0.1569	10
1, 168	2515.00	43.10	1.622	10.1	0.1613	10
1, 169	2530.00	42.90	1.667	10.1	0.1656	10
1, 170	2545.00	42.60	1.711	10.0	0.1717	10
1, 171	2560.00	42.40	1.767	10.0	0.1774	10
1, 172	2575.00	42.10	1.835	10.0	0.1833	10
1, 173	2590.00	41.90	1.897	10.0	0.1900	10
1, 174	2605.00	41.70	1.979	10.0	0.1988	10
1, 175	2620.00	41.40	2.061	10.0	0.2071	10
1, 176	2635.00	41.10	2.161	10.0	0.2171	10
1, 177	2650.00	40.90	2.277	9.9	0.2290	10

1, 178	2665.00	40.60	2.419	10.0	0.2419	10
1, 179	2680.00	40.40	2.572	10.0	0.2565	10
1, 180	2695.00	40.20	2.755	10.0	0.2749	10
1, 181	2710.00	39.90	2.977	10.0	0.2970	10
1, 182	2725.00	39.70	3.231	10.0	0.3231	10
1, 183	2740.00	39.40	3.524	10.0	0.3519	10
1, 184	2755.00	39.10	3.868	10.0	0.3872	10
1, 185	2770.00	38.90	4.229	10.0	0.4223	10
1, 186	2785.00	38.60	4.633	10.0	0.4633	10
1, 187	2800.00	38.40	5.046	10.0	0.5056	10
1, 188	2815.00	38.10	5.499	9.9	0.5532	10
1, 189	2830.00	37.90	5.997	10.0	0.6010	10
1, 190	2845.00	37.70	6.544	10.0	0.6531	10
1, 191	2860.00	37.40	7.148	10.0	0.7171	10
1, 192	2875.00	37.10	7.792	10.0	0.7782	10
1, 193	2890.00	36.90	8.497	9.9	0.8573	10
1, 194	2905.00	36.60	9.278	10.0	0.9264	10
1, 195	2920.00	36.40	10.120	10.0	1.0100	10
1, 196	2935.00	36.20	11.010	10.0	1.1020	10
1, 197	2950.00	35.90	11.950	10.0	1.1950	10
1, 198	2965.00	35.60	12.890	10.0	1.2860	10
1, 199	2980.00	35.40	13.770	10.0	1.3810	10
1, 200	2995.00	35.10	14.580	10.0	1.4600	10
1, 201	3010.00	34.90	15.290	10.0	1.5330	10
1, 202	3025.00	34.60	15.890	10.1	1.5810	10
1, 203	3040.00	34.40	16.400	10.0	1.6450	10
1, 204	3055.00	34.10	16.850	10.0	1.6900	10
1, 205	3070.00	33.90	17.240	10.0	1.7280	10
1, 206	3085.00	33.70	17.580	10.0	1.7630	10
1, 207	3100.00	33.40	18.020	10.0	1.7960	10
1, 208	3115.00	33.20	18.430	10.1	1.8310	10
1, 209	3130.00	32.90	18.870	10.0	1.8920	10
1, 210	3145.00	32.60	19.490	10.1	1.9360	10
1, 211	3160.00	32.40	20.120	10.0	2.0200	10
1, 212	3175.00	32.20	20.920	10.0	2.0860	10
1, 213	3190.00	31.90	21.760	10.0	2.1850	10
1, 214	3205.00	31.60	22.800	10.0	2.2770	10
1, 215	3220.00	31.40	23.890	10.0	2.3800	10
1, 216	3235.00	31.20	25.070	10.0	2.4980	10
1, 217	3250.00	30.90	26.360	10.0	2.6250	10
1, 218	3265.00	30.70	27.790	10.0	2.7700	10
1, 219	3280.00	30.40	29.290	10.0	2.9360	10
1, 220	3295.00	30.10	30.930	9.9	3.1100	10

B2.2: Abu-attifel treated with 500PPM ROA

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.06	84.90	- 0.3144	9.9	0.0149
1, 2	25.37	84.80	0.0283	9.7	0.0029
1, 3	40.38	84.60	0.0276	9.9	0.0028
1, 4	55.36	84.30	0.0250	10.0	0.0025
1, 5	70.35	83.90	0.0250	10.0	0.0025
1, 6	85.35	83.60	0.0261	10.0	0.0026
1, 7	100.40	83.30	0.0265	9.9	0.0027
1, 8	115.40	83.10	0.0260	10.0	0.0026
1, 9	130.40	82.90	0.0239	10.1	0.0024
1, 10	145.40	82.60	0.0242	10.0	0.0024
1, 11	160.40	82.40	0.0253	9.9	0.0025
1, 12	175.30	82.10	0.0242	10.0	0.0024
1, 13	190.30	81.90	0.0239	10.0	0.0024
1, 14	205.40	81.60	0.0252	10.0	0.0025
1, 15	220.40	81.40	0.0258	9.9	0.0026
1, 16	235.40	81.10	0.0249	10.0	0.0025
1, 17	250.40	80.90	0.0248	10.0	0.0025
1, 18	265.30	80.60	0.0260	9.9	0.0026
1, 19	280.40	80.40	0.0258	10.0	0.0026
1, 20	295.40	80.10	0.0248	10.0	0.0025
1, 21	310.30	79.90	0.0253	10.0	0.0025
1, 22	325.30	79.60	0.0268	9.9	0.0027
1, 23	340.30	79.40	0.0287	10.0	0.0029
1, 24	355.30	79.10	0.0286	10.0	0.0028
1, 25	370.40	78.90	0.0276	10.0	0.0028
1, 26	385.40	78.60	0.0293	9.9	0.0029
1, 27	400.30	78.40	0.0294	10.0	0.0029
1, 28	415.30	78.10	0.0285	10.0	0.0028
1, 29	430.30	77.90	0.0279	10.0	0.0028
1, 30	445.30	77.60	0.0295	9.9	0.0030
1, 31	460.30	77.40	0.0285	10.0	0.0028
1, 32	475.30	77.10	0.0276	10.0	0.0027
1, 33	490.30	76.90	0.0289	9.9	0.0029
1, 34	505.30	76.70	0.0284	10.0	0.0028
1, 35	520.30	76.40	0.0272	10.1	0.0027
1, 36	535.30	76.20	0.0274	10.0	0.0027
1, 37	550.30	75.90	0.0286	9.9	0.0029
1, 38	565.30	75.60	0.0281	10.0	0.0028
1, 39	580.30	75.40	0.0275	10.0	0.0027
1, 40	595.30	75.10	0.0286	10.0	0.0029
1, 41	610.30	74.90	0.0294	9.9	0.0030
1, 42	625.30	74.60	0.0287	10.0	0.0029

1, 43	640.30	74.40	0.0283	10.0	0.0028
1, 44	655.30	74.20	0.0297	10.0	0.0030
1, 45	670.30	73.90	0.0299	10.0	0.0030
1, 46	685.30	73.60	0.0291	10.0	0.0029
1, 47	700.30	73.40	0.0294	10.0	0.0029
1, 48	715.30	73.10	0.0307	9.9	0.0031
1, 49	730.30	72.90	0.0311	10.0	0.0031
1, 50	745.30	72.60	0.0299	10.0	0.0030
1, 51	760.30	72.40	0.0308	10.0	0.0031
1, 52	775.30	72.20	0.0327	9.9	0.0033
1, 53	790.30	71.90	0.0322	10.0	0.0032
1, 54	805.30	71.60	0.0317	10.0	0.0032
1, 55	820.30	71.40	0.0329	10.0	0.0033
1, 56	835.30	71.10	0.0339	10.0	0.0034
1, 57	850.30	70.90	0.0336	10.0	0.0034
1, 58	865.30	70.60	0.0336	10.0	0.0034
1, 59	880.30	70.40	0.0354	10.0	0.0036
1, 60	895.30	70.10	0.0374	10.0	0.0038
1, 61	910.30	69.90	0.0381	10.0	0.0038
1, 62	925.30	69.60	0.0404	10.1	0.0040
1, 63	940.30	69.40	0.0451	10.0	0.0045
1, 64	955.30	69.10	0.0497	10.0	0.0050
1, 65	970.30	68.90	0.0553	10.0	0.0055
1, 66	985.30	68.60	0.0628	10.1	0.0062
1, 67	1000.00	68.40	0.0716	10.0	0.0072
1, 68	1015.00	68.10	0.0808	10.0	0.0081
1, 69	1030.00	67.90	0.0915	10.0	0.0091
1, 70	1045.00	67.60	0.1052	9.9	0.0106
1, 71	1060.00	67.40	0.1201	9.9	0.0121
1, 72	1075.00	67.10	0.1351	10.1	0.0134
1, 73	1090.00	66.90	0.1522	9.9	0.0153
1, 74	1105.00	66.60	0.1777	10.0	0.0179
1, 75	1120.00	66.40	0.1982	10.0	0.0199
1, 76	1135.00	66.10	0.2205	10.1	0.0219
1, 77	1150.00	65.80	0.2417	10.0	0.0242
1, 78	1165.00	65.60	0.2715	9.9	0.0274
1, 79	1180.00	65.40	0.2987	10.1	0.0297
1, 80	1195.00	65.10	0.3190	10.0	0.0318
1, 81	1210.00	64.90	0.3477	10.0	0.0349
1, 82	1225.00	64.70	0.3726	9.9	0.0375
1, 83	1240.00	64.40	0.3974	10.1	0.0395
1, 84	1255.00	64.10	0.4201	10.0	0.0421
1, 85	1270.00	63.90	0.4436	9.9	0.0449
1, 86	1285.00	63.60	0.4728	10.0	0.0473
1, 87	1300.00	63.40	0.4923	10.0	0.0493
1, 88	1315.00	63.10	0.5114	10.0	0.0512
1, 89	1330.00	62.90	0.5360	9.9	0.0541
1, 90	1345.00	62.60	0.5562	10.1	0.0553

1, 91	1360.00	62.40	0.5704	10.0	0.0568
1, 92	1375.00	62.20	0.5895	10.0	0.0592
1, 93	1390.00	61.90	0.6108	9.9	0.0615
1, 94	1405.00	61.60	0.6279	10.1	0.0622
1, 95	1420.00	61.30	0.6426	10.1	0.0637
1, 96	1435.00	61.10	0.6609	10.0	0.0663
1, 97	1450.00	60.90	0.6733	9.9	0.0677
1, 98	1465.00	60.60	0.6866	10.0	0.0686
1, 99	1480.00	60.40	0.6969	10.0	0.0697
1, 100	1495.00	60.10	0.7146	10.0	0.0715
1, 101	1510.00	59.90	0.7240	10.0	0.0727
1, 102	1525.00	59.70	0.7367	10.1	0.0730
1, 103	1540.00	59.40	0.7460	10.0	0.0748
1, 104	1555.00	59.10	0.7588	9.9	0.0763
1, 105	1570.00	58.90	0.7729	10.1	0.0767
1, 106	1585.00	58.60	0.7788	10.0	0.0777
1, 107	1600.00	58.40	0.7913	10.0	0.0793
1, 108	1615.00	58.10	0.8004	10.0	0.0804
1, 109	1630.00	57.90	0.8091	10.0	0.0808
1, 110	1645.00	57.60	0.8159	10.0	0.0816
1, 111	1660.00	57.40	0.8244	10.0	0.0827
1, 112	1675.00	57.10	0.8385	10.0	0.0835
1, 113	1690.00	56.90	0.8415	10.0	0.0840
1, 114	1705.00	56.70	0.8487	10.0	0.0850
1, 115	1720.00	56.40	0.8555	10.0	0.0859
1, 116	1735.00	56.10	0.8668	10.0	0.0870
1, 117	1750.00	55.90	0.8734	10.0	0.0872
1, 118	1765.00	55.60	0.8819	10.0	0.0883
1, 119	1780.00	55.40	0.8892	10.0	0.0893
1, 120	1795.00	55.10	0.9028	10.1	0.0896
1, 121	1810.00	54.90	0.9052	10.0	0.0905
1, 122	1825.00	54.70	0.9138	10.0	0.0916
1, 123	1840.00	54.40	0.9228	10.0	0.0927
1, 124	1855.00	54.10	0.9298	10.0	0.0930
1, 125	1870.00	53.90	0.9385	10.0	0.0939
1, 126	1885.00	53.60	0.9472	10.0	0.0951
1, 127	1900.00	53.40	0.9584	10.0	0.0962
1, 128	1915.00	53.10	0.9663	10.0	0.0965
1, 129	1930.00	52.90	0.9728	10.0	0.0974
1, 130	1945.00	52.60	0.9850	10.0	0.0989
1, 131	1960.00	52.30	0.9983	10.1	0.0992
1, 132	1975.00	52.10	1.0020	10.0	0.1001
1, 133	1990.00	51.90	1.0100	10.0	0.1012
1, 134	2005.00	51.60	1.0240	10.0	0.1026
1, 135	2020.00	51.40	1.0300	10.0	0.1032
1, 136	2035.00	51.10	1.0410	10.0	0.1040
1, 137	2050.00	50.90	1.0470	10.0	0.1050
1, 138	2065.00	50.60	1.0610	10.0	0.1065

1, 139	2080.00	50.40	1.0700	10.0	0.1070
1, 140	2095.00	50.10	1.0820	10.0	0.1083
1, 141	2110.00	49.90	1.0960	10.0	0.1099
1, 142	2125.00	49.60	1.1090	10.0	0.1112
1, 143	2140.00	49.40	1.1180	10.0	0.1118
1, 144	2155.00	49.10	1.1300	10.0	0.1130
1, 145	2170.00	48.90	1.1420	10.0	0.1146
1, 146	2185.00	48.60	1.1550	10.0	0.1158
1, 147	2200.00	48.40	1.1680	10.0	0.1168
1, 148	2215.00	48.10	1.1800	10.0	0.1182
1, 149	2230.00	47.90	1.1920	10.0	0.1197
1, 150	2245.00	47.60	1.2060	10.0	0.1208
1, 151	2260.00	47.40	1.2200	10.0	0.1221
1, 152	2275.00	47.10	1.2340	10.0	0.1236
1, 153	2290.00	46.90	1.2460	10.0	0.1250
1, 154	2305.00	46.60	1.2620	10.0	0.1262
1, 155	2320.00	46.40	1.2730	10.0	0.1275
1, 156	2335.00	46.10	1.2880	10.0	0.1292
1, 157	2350.00	45.90	1.3010	10.0	0.1303
1, 158	2365.00	45.70	1.3160	10.0	0.1316
1, 159	2380.00	45.40	1.3290	10.0	0.1331
1, 160	2395.00	45.20	1.3540	10.0	0.1357
1, 161	2410.00	44.90	1.3660	10.0	0.1370
1, 162	2425.00	44.70	1.3850	10.0	0.1386
1, 163	2440.00	44.40	1.4010	10.0	0.1403
1, 164	2455.00	44.10	1.4260	10.0	0.1422
1, 165	2470.00	43.90	1.4420	10.0	0.1445
1, 166	2485.00	43.60	1.4570	10.0	0.1458
1, 167	2500.00	43.40	1.4750	10.0	0.1479
1, 168	2515.00	43.20	1.5040	10.1	0.1497
1, 169	2530.00	42.90	1.5190	10.0	0.1520
1, 170	2545.00	42.60	1.5470	10.0	0.1549
1, 171	2560.00	42.40	1.5650	10.0	0.1569
1, 172	2575.00	42.10	1.5920	10.0	0.1595
1, 173	2590.00	41.90	1.6250	10.1	0.1612
1, 174	2605.00	41.60	1.6410	10.0	0.1643
1, 175	2620.00	41.40	1.6740	10.0	0.1681
1, 176	2635.00	41.10	1.7150	10.0	0.1711
1, 177	2650.00	40.90	1.7420	10.0	0.1744
1, 178	2665.00	40.60	1.7770	10.0	0.1780
1, 179	2680.00	40.40	1.8180	10.0	0.1825
1, 180	2695.00	40.20	1.8680	10.0	0.1873

B2.3: Abu-attifel treated with 1000PPM ROA

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
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1, 1	10.32	85.00	0.0319	9.6	0.0033
1, 2	25.33	84.80	0.0292	9.9	0.0029
1, 3	40.33	84.60	0.0284	10.0	0.0028
1, 4	55.33	84.20	0.0284	10.0	0.0028
1, 5	70.31	83.90	0.0292	10.0	0.0029
1, 6	85.31	83.70	0.0275	10.0	0.0027
1, 7	100.30	83.40	0.0283	10.0	0.0028
1, 8	115.30	83.10	0.0292	10.0	0.0029
1, 9	130.30	82.90	0.0294	10.0	0.0030
1, 10	145.30	82.60	0.0276	10.0	0.0028
1, 11	160.30	82.40	0.0281	10.0	0.0028
1, 12	175.30	82.10	0.0301	10.0	0.0030
1, 13	190.30	81.90	0.0298	10.0	0.0030
1, 14	205.30	81.60	0.0279	10.0	0.0028
1, 15	220.30	81.40	0.0291	10.0	0.0029
1, 16	235.30	81.10	0.0319	10.0	0.0032
1, 17	250.30	80.90	0.0318	10.0	0.0032
1, 18	265.30	80.60	0.0312	10.0	0.0031
1, 19	280.30	80.40	0.0317	10.0	0.0032
1, 20	295.30	80.10	0.0325	10.0	0.0033
1, 21	310.30	79.90	0.0320	10.0	0.0032
1, 22	325.30	79.60	0.0317	10.0	0.0032
1, 23	340.30	79.40	0.0326	10.0	0.0033
1, 24	355.30	79.20	0.0331	10.0	0.0033
1, 25	370.30	78.90	0.0324	10.0	0.0032
1, 26	385.30	78.60	0.0325	10.0	0.0032
1, 27	400.30	78.40	0.0329	10.0	0.0033
1, 28	415.30	78.10	0.0332	10.0	0.0033
1, 29	430.30	77.90	0.0325	10.0	0.0032
1, 30	445.30	77.60	0.0323	10.0	0.0032
1, 31	460.30	77.40	0.0323	10.0	0.0032
1, 32	475.30	77.10	0.0314	10.0	0.0031
1, 33	490.30	76.90	0.0335	10.0	0.0033
1, 34	505.30	76.60	0.0340	10.0	0.0034
1, 35	520.30	76.40	0.0349	10.0	0.0035
1, 36	535.30	76.10	0.0345	10.0	0.0034
1, 37	550.30	75.90	0.0344	10.0	0.0034
1, 38	565.30	75.60	0.0353	10.0	0.0035
1, 39	580.30	75.40	0.0358	10.0	0.0036
1, 40	595.30	75.10	0.0351	10.0	0.0035
1, 41	610.30	74.90	0.0354	10.0	0.0035
1, 42	625.30	74.60	0.0362	10.0	0.0036
1, 43	640.30	74.40	0.0365	10.0	0.0037
1, 44	655.30	74.10	0.0361	10.0	0.0036

1, 45	670.30	73.90	0.0363	10.0	0.0036
1, 46	685.30	73.70	0.0375	10.0	0.0038
1, 47	700.30	73.40	0.0376	10.0	0.0038
1, 48	715.30	73.10	0.0379	10.1	0.0038
1, 49	730.30	72.90	0.0382	10.0	0.0038
1, 50	745.30	72.60	0.0394	10.0	0.0040
1, 51	760.30	72.40	0.0389	10.0	0.0039
1, 52	775.30	72.10	0.0389	10.0	0.0039
1, 53	790.30	71.90	0.0401	10.0	0.0040
1, 54	805.30	71.60	0.0419	9.9	0.0042
1, 55	820.30	71.40	0.0417	10.0	0.0042
1, 56	835.30	71.10	0.0454	10.0	0.0045
1, 57	850.30	70.90	0.0513	9.9	0.0052
1, 58	865.30	70.60	0.0569	10.0	0.0057
1, 59	880.30	70.40	0.0602	10.1	0.0060
1, 60	895.30	70.20	0.0643	10.0	0.0064
1, 61	910.30	69.90	0.0710	9.9	0.0071
1, 62	925.30	69.60	0.0766	10.1	0.0076
1, 63	940.20	69.40	0.0810	10.1	0.0080
1, 64	955.20	69.10	0.0859	10.0	0.0086
1, 65	970.20	68.90	0.0920	10.0	0.0092
1, 66	985.20	68.70	0.0983	10.0	0.0099
1, 67	1000.00	68.40	0.1046	10.0	0.0105
1, 68	1015.00	68.10	0.1128	9.9	0.0113
1, 69	1030.00	67.90	0.1193	9.9	0.0120
1, 70	1045.00	67.60	0.1230	10.0	0.0123
1, 71	1060.00	67.40	0.1291	10.0	0.0129
1, 72	1075.00	67.10	0.1369	9.9	0.0138
1, 73	1090.00	66.90	0.1425	10.0	0.0143
1, 74	1105.00	66.60	0.1452	10.0	0.0145
1, 75	1120.00	66.40	0.1520	10.0	0.0153
1, 76	1135.00	66.20	0.1597	10.0	0.0160
1, 77	1150.00	65.90	0.1641	10.0	0.0165
1, 78	1165.00	65.60	0.1694	10.0	0.0169
1, 79	1180.00	65.40	0.1744	10.0	0.0175
1, 80	1195.00	65.10	0.1815	10.0	0.0182
1, 81	1210.00	64.90	0.1854	10.0	0.0186
1, 82	1225.00	64.60	0.1899	10.0	0.0190
1, 83	1240.00	64.40	0.1963	10.0	0.0197
1, 84	1255.00	64.10	0.2012	10.0	0.0202
1, 85	1270.00	63.90	0.2041	10.0	0.0204
1, 86	1285.00	63.60	0.2105	10.0	0.0211
1, 87	1300.00	63.40	0.2174	9.9	0.0219
1, 88	1315.00	63.10	0.2215	10.0	0.0222

1, 89	1330.00	62.90	0.2281	10.0	0.0228
1, 90	1345.00	62.60	0.2333	10.0	0.0234
1, 91	1360.00	62.40	0.2395	10.0	0.0241
1, 92	1375.00	62.10	0.2471	10.1	0.0246
1, 93	1390.00	61.90	0.2501	10.0	0.0250
1, 94	1405.00	61.70	0.2558	10.0	0.0257
1, 95	1420.00	61.40	0.2620	9.9	0.0263
1, 96	1435.00	61.10	0.2684	10.1	0.0266
1, 97	1450.00	60.90	0.2726	10.0	0.0273
1, 98	1465.00	60.60	0.2780	9.9	0.0280
1, 99	1480.00	60.40	0.2835	10.0	0.0285
1, 100	1495.00	60.20	0.2878	10.0	0.0288
1, 101	1510.00	59.90	0.2927	10.0	0.0293
1, 102	1525.00	59.60	0.2987	9.9	0.0300
1, 103	1540.00	59.40	0.3057	10.1	0.0304
1, 104	1555.00	59.20	0.3084	10.0	0.0308
1, 105	1570.00	58.90	0.3125	10.0	0.0313
1, 106	1585.00	58.60	0.3213	10.0	0.0321
1, 107	1600.00	58.40	0.3235	10.0	0.0324
1, 108	1615.00	58.10	0.3277	10.1	0.0326
1, 109	1630.00	57.90	0.3328	10.0	0.0334
1, 110	1645.00	57.70	0.3391	10.0	0.0341
1, 111	1660.00	57.40	0.3434	10.0	0.0343
1, 112	1675.00	57.10	0.3479	10.0	0.0348
1, 113	1690.00	56.90	0.3570	10.0	0.0358
1, 114	1705.00	56.60	0.3592	10.0	0.0360
1, 115	1720.00	56.40	0.3630	10.0	0.0363
1, 116	1735.00	56.10	0.3672	10.0	0.0368
1, 117	1750.00	55.90	0.3757	10.0	0.0376
1, 118	1765.00	55.60	0.3785	10.0	0.0379
1, 119	1780.00	55.40	0.3812	10.0	0.0381
1, 120	1795.00	55.10	0.3870	10.0	0.0388
1, 121	1810.00	54.90	0.3924	9.9	0.0395
1, 122	1825.00	54.60	0.3970	10.0	0.0397
1, 123	1840.00	54.40	0.4017	10.0	0.0402
1, 124	1855.00	54.10	0.4062	10.0	0.0408
1, 125	1870.00	53.90	0.4116	10.0	0.0413
1, 126	1885.00	53.70	0.4161	10.1	0.0413
1, 127	1900.00	53.40	0.4191	10.0	0.0419
1, 128	1915.00	53.10	0.4247	9.9	0.0427
1, 129	1930.00	52.90	0.4309	10.0	0.0432
1, 130	1945.00	52.60	0.4345	10.0	0.0434
1, 131	1960.00	52.40	0.4386	10.0	0.0439
1, 132	1975.00	52.10	0.4460	9.9	0.0448

1, 133	1990.00	51.90	0.4500	10.0	0.0450
1, 134	2005.00	51.60	0.4543	10.0	0.0454
1, 135	2020.00	51.40	0.4587	10.0	0.0458
1, 136	2035.00	51.10	0.4630	10.0	0.0465
1, 137	2050.00	50.90	0.4711	10.0	0.0471
1, 138	2065.00	50.60	0.4722	10.0	0.0472
1, 139	2080.00	50.40	0.4802	10.0	0.0482
1, 140	2095.00	50.10	0.4842	10.0	0.0486
1, 141	2110.00	49.90	0.4879	10.0	0.0487
1, 142	2125.00	49.60	0.4923	10.0	0.0490
1, 143	2140.00	49.40	0.5006	10.0	0.0503
1, 144	2155.00	49.10	0.5059	10.0	0.0506
1, 145	2170.00	48.90	0.5108	10.1	0.0507
1, 146	2185.00	48.60	0.5129	10.0	0.0514
1, 147	2200.00	48.40	0.5239	10.0	0.0523
1, 148	2215.00	48.20	0.5256	10.0	0.0525
1, 149	2230.00	47.90	0.5305	10.0	0.0530
1, 150	2245.00	47.70	0.5348	10.0	0.0537
1, 151	2260.00	47.40	0.5431	10.0	0.0544
1, 152	2275.00	47.10	0.5514	10.1	0.0547
1, 153	2290.00	46.90	0.5549	10.0	0.0555
1, 154	2305.00	46.60	0.5632	10.0	0.0565
1, 155	2320.00	46.40	0.5664	10.0	0.0568
1, 156	2335.00	46.20	0.5720	10.0	0.0571
1, 157	2350.00	45.90	0.5799	10.0	0.0581
1, 158	2365.00	45.60	0.5851	10.0	0.0587
1, 159	2380.00	45.40	0.5902	10.0	0.0591
1, 160	2395.00	45.10	0.5950	10.0	0.0594
1, 161	2410.00	44.90	0.6015	10.0	0.0603
1, 162	2425.00	44.60	0.6101	10.0	0.0612
1, 163	2440.00	44.40	0.6165	10.0	0.0617
1, 164	2455.00	44.20	0.6216	10.0	0.0621
1, 165	2470.00	43.90	0.6291	10.0	0.0631
1, 166	2485.00	43.60	0.6369	10.0	0.0640
1, 167	2500.00	43.40	0.6431	10.0	0.0643
1, 168	2515.00	43.10	0.6509	10.0	0.0651
1, 169	2530.00	42.90	0.6585	10.0	0.0661
1, 170	2545.00	42.70	0.6713	10.1	0.0667
1, 171	2560.00	42.40	0.6760	10.0	0.0676
1, 172	2575.00	42.20	0.6867	10.0	0.0684
1, 173	2590.00	41.90	0.6960	10.0	0.0698
1, 174	2605.00	41.60	0.7075	10.0	0.0708
1, 175	2620.00	41.40	0.7185	10.0	0.0719
1, 176	2635.00	41.10	0.7352	10.0	0.0737

1, 177	2650.00	40.90	0.7471	10.0	0.0750
1, 178	2665.00	40.60	0.7648	10.0	0.0766
1, 179	2680.00	40.40	0.7802	10.0	0.0781
1, 180	2695.00	40.10	0.8029	9.9	0.0807

B2.4: Abu-attifel treated with 2000PPM PPD

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.22	85.00	0.0284	9.6	0.0030
1, 2	25.23	85.00	0.0271	10.0	0.0027
1, 3	40.23	84.70	0.0263	10.0	0.0026
1, 4	55.23	84.40	0.0263	10.0	0.0026
1, 5	70.21	84.00	0.0267	10.0	0.0027
1, 6	85.23	83.70	0.0263	10.0	0.0026
1, 7	100.20	83.40	0.0261	10.0	0.0026
1, 8	115.20	83.10	0.0266	10.0	0.0027
1, 9	130.20	82.90	0.0266	10.0	0.0027
1, 10	145.20	82.60	0.0263	10.0	0.0026
1, 11	160.20	82.40	0.0263	10.0	0.0026
1, 12	175.20	82.20	0.0268	10.0	0.0027
1, 13	190.20	81.90	0.0270	10.0	0.0027
1, 14	205.20	81.70	0.0269	10.0	0.0027
1, 15	220.20	81.40	0.0267	10.0	0.0027
1, 16	235.20	81.20	0.0271	10.0	0.0027
1, 17	250.20	80.90	0.0272	10.0	0.0027
1, 18	265.20	80.70	0.0273	10.0	0.0027
1, 19	280.20	80.40	0.0275	10.0	0.0028
1, 20	295.20	80.10	0.0280	10.0	0.0028
1, 21	310.20	79.90	0.0278	10.0	0.0028
1, 22	325.20	79.70	0.0274	10.0	0.0027
1, 23	340.20	79.40	0.0278	10.0	0.0028
1, 24	355.20	79.20	0.0282	10.0	0.0028
1, 25	370.20	78.90	0.0280	10.0	0.0028
1, 26	385.20	78.60	0.0280	10.0	0.0028
1, 27	400.20	78.40	0.0284	10.0	0.0028
1, 28	415.20	78.10	0.0285	10.0	0.0028
1, 29	430.20	77.90	0.0283	10.0	0.0028
1, 30	445.20	77.70	0.0288	10.0	0.0029

1, 31	460.20	77.40	0.0292	10.0	0.0029
1, 32	475.20	77.20	0.0289	10.0	0.0029
1, 33	490.20	76.90	0.0289	10.0	0.0029
1, 34	505.20	76.60	0.0291	10.0	0.0029
1, 35	520.20	76.40	0.0298	10.0	0.0030
1, 36	535.20	76.10	0.0299	10.0	0.0030
1, 37	550.20	75.90	0.0298	10.0	0.0030
1, 38	565.20	75.60	0.0299	10.0	0.0030
1, 39	580.20	75.40	0.0304	10.0	0.0030
1, 40	595.20	75.10	0.0303	10.0	0.0030
1, 41	610.20	74.90	0.0302	10.0	0.0030
1, 42	625.20	74.60	0.0305	10.0	0.0031
1, 43	640.20	74.40	0.0307	10.0	0.0031
1, 44	655.20	74.10	0.0306	10.0	0.0031
1, 45	670.20	73.90	0.0308	10.0	0.0031
1, 46	685.20	73.60	0.0311	10.0	0.0031
1, 47	700.20	73.40	0.0315	10.0	0.0032
1, 48	715.20	73.20	0.0316	10.0	0.0032
1, 49	730.20	72.90	0.0316	10.0	0.0032
1, 50	745.20	72.70	0.0318	10.0	0.0032
1, 51	760.20	72.40	0.0318	10.0	0.0032
1, 52	775.20	72.20	0.0319	10.0	0.0032
1, 53	790.20	71.90	0.0329	10.0	0.0033
1, 54	805.20	71.70	0.0328	10.0	0.0033
1, 55	820.20	71.40	0.0327	10.0	0.0033
1, 56	835.20	71.10	0.0327	10.0	0.0033
1, 57	850.20	70.90	0.0332	10.0	0.0033
1, 58	865.20	70.60	0.0332	10.0	0.0033
1, 59	880.20	70.40	0.0336	10.0	0.0034
1, 60	895.20	70.20	0.0334	10.0	0.0033
1, 61	910.20	69.90	0.0337	10.0	0.0034
1, 62	925.20	69.60	0.0339	10.0	0.0034
1, 63	940.20	69.40	0.0338	10.0	0.0034
1, 64	955.20	69.10	0.0342	10.0	0.0034
1, 65	970.10	68.90	0.0348	10.0	0.0035
1, 66	985.10	68.60	0.0349	10.0	0.0035
1, 67	1000.00	68.40	0.0347	10.0	0.0035
1, 68	1015.00	68.10	0.0350	10.0	0.0035
1, 69	1030.00	67.90	0.0357	10.0	0.0036
1, 70	1045.00	67.60	0.0355	10.0	0.0036
1, 71	1060.00	67.40	0.0358	10.0	0.0036
1, 72	1075.00	67.10	0.0366	10.0	0.0037
1, 73	1090.00	66.90	0.0369	10.0	0.0037
1, 74	1105.00	66.60	0.0369	10.0	0.0037

1, 75	1120.00	66.40	0.0379	10.0	0.0038
1, 76	1135.00	66.10	0.0388	10.0	0.0039
1, 77	1150.00	65.90	0.0401	10.0	0.0040
1, 78	1165.00	65.70	0.0426	10.0	0.0043
1, 79	1180.00	65.40	0.0456	10.0	0.0045
1, 80	1195.00	65.10	0.0483	10.0	0.0048
1, 81	1210.00	64.90	0.0525	10.0	0.0053
1, 82	1225.00	64.60	0.0596	10.0	0.0059
1, 83	1240.00	64.40	0.0665	10.0	0.0066
1, 84	1255.00	64.10	0.0747	10.0	0.0075
1, 85	1270.00	63.90	0.0810	10.0	0.0081
1, 86	1285.00	63.60	0.0897	9.9	0.0090
1, 87	1300.00	63.40	0.1003	10.0	0.0101
1, 88	1315.00	63.10	0.1068	10.0	0.0107
1, 89	1330.00	62.90	0.1159	10.1	0.0115
1, 90	1345.00	62.60	0.1241	10.0	0.0124
1, 91	1360.00	62.40	0.1335	10.0	0.0134
1, 92	1375.00	62.10	0.1414	10.0	0.0142
1, 93	1390.00	61.90	0.1487	10.0	0.0149
1, 94	1405.00	61.60	0.1587	10.0	0.0159
1, 95	1420.00	61.40	0.1645	10.0	0.0165
1, 96	1435.00	61.10	0.1715	10.0	0.0172
1, 97	1450.00	60.90	0.1787	10.0	0.0179
1, 98	1465.00	60.60	0.1878	10.0	0.0188
1, 99	1480.00	60.40	0.1922	10.0	0.0193
1, 100	1495.00	60.10	0.1985	10.1	0.0196
1, 101	1510.00	59.90	0.2032	10.0	0.0204
1, 102	1525.00	59.60	0.2075	10.0	0.0208
1, 103	1540.00	59.40	0.2165	10.1	0.0215
1, 104	1555.00	59.10	0.2196	10.0	0.0220
1, 105	1570.00	58.90	0.2230	10.0	0.0224
1, 106	1585.00	58.60	0.2283	10.0	0.0229
1, 107	1600.00	58.40	0.2361	10.1	0.0234
1, 108	1615.00	58.10	0.2362	10.0	0.0236
1, 109	1630.00	57.90	0.2397	10.0	0.0240
1, 110	1645.00	57.60	0.2436	10.0	0.0244
1, 111	1660.00	57.40	0.2467	10.1	0.0245
1, 112	1675.00	57.10	0.2499	10.0	0.0250
1, 113	1690.00	56.90	0.2521	10.0	0.0252
1, 114	1705.00	56.60	0.2574	10.0	0.0258
1, 115	1720.00	56.40	0.2606	10.1	0.0259
1, 116	1735.00	56.10	0.2633	10.0	0.0264
1, 117	1750.00	55.90	0.2646	10.0	0.0265
1, 118	1765.00	55.60	0.2672	10.0	0.0267

1, 119	1780.00	55.40	0.2698	10.0	0.0270
1, 120	1795.00	55.10	0.2735	10.0	0.0274
1, 121	1810.00	54.90	0.2760	10.0	0.0277
1, 122	1825.00	54.60	0.2789	10.0	0.0279
1, 123	1840.00	54.40	0.2810	10.0	0.0281
1, 124	1855.00	54.20	0.2881	10.1	0.0287
1, 125	1870.00	53.90	0.2916	10.0	0.0292
1, 126	1885.00	53.60	0.2938	10.0	0.0294
1, 127	1900.00	53.40	0.2979	10.0	0.0298
1, 128	1915.00	53.20	0.2996	10.0	0.0301
1, 129	1930.00	52.90	0.3041	10.0	0.0305
1, 130	1945.00	52.60	0.3078	10.0	0.0308
1, 131	1960.00	52.40	0.3134	10.0	0.0314
1, 132	1975.00	52.10	0.3193	10.0	0.0319
1, 133	1990.00	51.90	0.3198	10.0	0.0320
1, 134	2005.00	51.60	0.3218	10.0	0.0322
1, 135	2020.00	51.40	0.3276	10.0	0.0328
1, 136	2035.00	51.10	0.3295	10.0	0.0331
1, 137	2050.00	50.90	0.3324	10.0	0.0333
1, 138	2065.00	50.60	0.3360	10.0	0.0336
1, 139	2080.00	50.40	0.3426	10.0	0.0342
1, 140	2095.00	50.10	0.3423	10.0	0.0343
1, 141	2110.00	49.90	0.3470	10.0	0.0347
1, 142	2125.00	49.60	0.3518	10.0	0.0351
1, 143	2140.00	49.40	0.3548	10.0	0.0356
1, 144	2155.00	49.10	0.3605	10.1	0.0358
1, 145	2170.00	48.90	0.3614	10.0	0.0362
1, 146	2185.00	48.60	0.3667	10.0	0.0367
1, 147	2200.00	48.40	0.3705	10.0	0.0371
1, 148	2215.00	48.20	0.3758	10.0	0.0376
1, 149	2230.00	47.90	0.3812	10.1	0.0379
1, 150	2245.00	47.70	0.3834	10.0	0.0384
1, 151	2260.00	47.40	0.3874	10.0	0.0389
1, 152	2275.00	47.10	0.3913	10.0	0.0392
1, 153	2290.00	46.90	0.3959	10.0	0.0396
1, 154	2305.00	46.70	0.3982	10.0	0.0399
1, 155	2320.00	46.40	0.4049	10.0	0.0406
1, 156	2335.00	46.20	0.4105	10.1	0.0408
1, 157	2350.00	45.90	0.4118	10.0	0.0412
1, 158	2365.00	45.60	0.4206	10.0	0.0420
1, 159	2380.00	45.40	0.4223	10.0	0.0423
1, 160	2395.00	45.10	0.4270	10.0	0.0427
1, 161	2410.00	44.90	0.4335	10.0	0.0435
1, 162	2425.00	44.60	0.4379	10.0	0.0439

1, 163	2440.00	44.40	0.4434	10.0	0.0444
1, 164	2455.00	44.20	0.4482	10.0	0.0449
1, 165	2470.00	43.90	0.4529	10.0	0.0454
1, 166	2485.00	43.70	0.4598	10.0	0.0460
1, 167	2500.00	43.40	0.4660	10.0	0.0467
1, 168	2515.00	43.10	0.4716	10.0	0.0472
1, 169	2530.00	42.90	0.4766	10.0	0.0478
1, 170	2545.00	42.60	0.4841	10.0	0.0485
1, 171	2560.00	42.40	0.4924	10.0	0.0493
1, 172	2575.00	42.20	0.4981	10.0	0.0499
1, 173	2590.00	41.90	0.5053	10.0	0.0507
1, 174	2605.00	41.70	0.5159	10.1	0.0513
1, 175	2620.00	41.40	0.5211	10.0	0.0522
1, 176	2635.00	41.10	0.5301	10.0	0.0532
1, 177	2650.00	40.90	0.5440	10.0	0.0542
1, 178	2665.00	40.60	0.5513	10.0	0.0553
1, 179	2680.00	40.40	0.5621	10.0	0.0563
1, 180	2695.00	40.10	0.5740	10.0	0.0576
1, 181	2710.00	39.90	0.5886	10.0	0.0590
1, 182	2725.00	39.60	0.6047	10.0	0.0607
1, 183	2740.00	39.40	0.6216	10.0	0.0624
1, 184	2755.00	39.20	0.6479	10.0	0.0648
1, 185	2770.00	38.90	0.6696	10.0	0.0672
1, 186	2785.00	38.60	0.7046	10.0	0.0703
1, 187	2800.00	38.40	0.7402	10.0	0.0741
1, 188	2815.00	38.20	0.7884	10.0	0.0790
1, 189	2830.00	37.90	0.8441	10.0	0.0843
1, 190	2845.00	37.60	0.9121	10.0	0.0911
1, 191	2860.00	37.40	0.9969	10.0	0.0995
1, 192	2875.00	37.20	1.0920	10.1	0.1087
1, 193	2890.00	36.90	1.1990	10.0	0.1199
1, 194	2905.00	36.70	1.3350	10.0	0.1336
1, 195	2920.00	36.40	1.5020	10.0	0.1503
1, 196	2935.00	36.10	1.6840	10.0	0.1684
1, 197	2950.00	35.90	1.9070	10.0	0.1903
1, 198	2965.00	35.60	2.1600	10.0	0.2164
1, 199	2980.00	35.40	2.4570	10.0	0.2449
1, 200	2995.00	35.20	2.8090	10.0	0.2799
1, 201	3010.00	34.90	3.2390	10.0	0.3244
1, 202	3025.00	34.70	3.7500	10.0	0.3747
1, 203	3040.00	34.40	4.3440	10.0	0.4364
1, 204	3055.00	34.20	5.0460	10.0	0.5050
1, 205	3070.00	33.90	5.8800	10.0	0.5873
1, 206	3085.00	33.70	6.8530	10.0	0.6842

1, 207	3100.00	33.40	7.9490	10.0	0.7964
1, 208	3115.00	33.20	9.1730	10.0	0.9175
1, 209	3130.00	32.90	10.4600	10.0	1.0430
1, 210	3145.00	32.70	11.8200	10.0	1.1780
1, 211	3160.00	32.40	13.1900	10.0	1.3190
1, 212	3175.00	32.10	14.5700	10.0	1.4610
1, 213	3190.00	31.90	15.9200	10.0	1.5900
1, 214	3205.00	31.70	17.2400	10.0	1.7180
1, 215	3220.00	31.40	18.5000	10.0	1.8440
1, 216	3235.00	31.20	19.7800	10.0	1.9720
1, 217	3250.00	30.90	21.0100	10.0	2.0940
1, 218	3265.00	30.70	22.2100	9.9	2.2340
1, 219	3280.00	30.40	23.4100	9.9	2.3530
1, 220	3295.00	30.20	24.5800	10.0	2.4680

B2.5: Abu-attifel treated with 20% Sertica

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.34	85.00	0.0177	9.6	0.0018
1, 2	25.32	84.90	0.0189	9.9	0.0019
1, 3	40.32	84.60	0.0184	9.9	0.0019
1, 4	55.31	84.30	0.0178	10.1	0.0018
1, 5	70.31	84.00	0.0173	10.0	0.0017
1, 6	85.31	83.60	0.0172	9.9	0.0017
1, 7	100.30	83.40	0.0171	10.0	0.0017
1, 8	115.30	83.10	0.0169	10.1	0.0017
1, 9	130.30	82.90	0.0181	10.0	0.0018
1, 10	145.30	82.60	0.0189	9.9	0.0019
1, 11	160.30	82.40	0.0195	10.0	0.0019
1, 12	175.30	82.10	0.0171	10.0	0.0017
1, 13	190.30	81.90	0.0183	9.9	0.0018
1, 14	205.30	81.60	0.0194	10.0	0.0020
1, 15	220.30	81.40	0.0187	10.0	0.0019
1, 16	235.30	81.10	0.0184	10.1	0.0018
1, 17	250.30	80.90	0.0188	9.9	0.0019
1, 18	265.30	80.60	0.0188	9.9	0.0019

1, 19	280.30	80.40	0.0179	10.0	0.0018
1, 20	295.30	80.10	0.0183	10.0	0.0018
1, 21	310.30	79.90	0.0200	9.9	0.0020
1, 22	325.30	79.60	0.0180	10.0	0.0018
1, 23	340.30	79.40	0.0176	10.1	0.0017
1, 24	355.30	79.10	0.0183	10.0	0.0018
1, 25	370.30	78.90	0.0219	9.9	0.0022
1, 26	385.30	78.60	0.0201	10.0	0.0020
1, 27	400.30	78.40	0.0195	10.0	0.0019
1, 28	415.30	78.10	0.0205	9.9	0.0021
1, 29	430.30	77.90	0.0208	10.0	0.0021
1, 30	445.30	77.60	0.0202	10.0	0.0020
1, 31	460.30	77.30	0.0193	10.0	0.0019
1, 32	475.30	77.10	0.0229	9.9	0.0023
1, 33	490.30	76.90	0.0227	9.9	0.0023
1, 34	505.30	76.60	0.0211	10.0	0.0021
1, 35	520.30	76.40	0.0216	10.0	0.0022
1, 36	535.30	76.10	0.0225	9.9	0.0023
1, 37	550.30	75.90	0.0223	10.0	0.0022
1, 38	565.30	75.60	0.0217	10.0	0.0022
1, 39	580.30	75.40	0.0229	10.0	0.0023
1, 40	595.30	75.10	0.0234	9.9	0.0024
1, 41	610.30	74.90	0.0226	10.0	0.0023
1, 42	625.30	74.70	0.0223	10.1	0.0022
1, 43	640.30	74.40	0.0232	10.0	0.0023
1, 44	655.30	74.10	0.0238	9.9	0.0024
1, 45	670.30	73.90	0.0235	10.1	0.0023
1, 46	685.30	73.60	0.0229	10.1	0.0023
1, 47	700.30	73.40	0.0240	9.9	0.0024
1, 48	715.30	73.10	0.0238	10.0	0.0024
1, 49	730.30	72.90	0.0229	10.0	0.0023
1, 50	745.30	72.70	0.0232	10.0	0.0023

1, 51	760.30	72.40	0.0241	9.9	0.0024
1, 52	775.30	72.10	0.0234	10.0	0.0023
1, 53	790.30	71.90	0.0230	10.0	0.0023
1, 54	805.30	71.60	0.0221	10.0	0.0022
1, 55	820.30	71.40	0.0231	9.9	0.0023
1, 56	835.30	71.10	0.0231	10.0	0.0023
1, 57	850.30	70.90	0.0212	10.0	0.0021
1, 58	865.30	70.60	0.0222	10.0	0.0022
1, 59	880.30	70.40	0.0236	10.0	0.0024
1, 60	895.30	70.10	0.0237	10.0	0.0024
1, 61	910.30	69.90	0.0231	10.0	0.0023
1, 62	925.30	69.60	0.0233	9.9	0.0023
1, 63	940.30	69.40	0.0236	10.0	0.0024
1, 64	955.30	69.10	0.0234	10.0	0.0023
1, 65	970.30	68.90	0.0247	10.0	0.0025
1, 66	985.30	68.60	0.0247	9.9	0.0025
1, 67	1000.00	68.40	0.0242	10.0	0.0024
1, 68	1015.00	68.10	0.0257	10.1	0.0026
1, 69	1030.00	67.90	0.0248	10.0	0.0025
1, 70	1045.00	67.70	0.0268	9.9	0.0027
1, 71	1060.00	67.40	0.0262	10.0	0.0026
1, 72	1075.00	67.20	0.0262	10.0	0.0026
1, 73	1090.00	66.90	0.0262	10.0	0.0026
1, 74	1105.00	66.60	0.0267	9.9	0.0027
1, 75	1120.00	66.40	0.0256	10.0	0.0025
1, 76	1135.00	66.10	0.0263	10.0	0.0026
1, 77	1150.00	65.90	0.0280	10.0	0.0028
1, 78	1165.00	65.60	0.0291	10.0	0.0029
1, 79	1180.00	65.40	0.0307	10.0	0.0031
1, 80	1195.00	65.10	0.0317	10.0	0.0032
1, 81	1210.00	64.90	0.0331	9.9	0.0033
1, 82	1225.00	64.70	0.0367	10.0	0.0037

1, 83	1240.00	64.40	0.0364	10.0	0.0036
1, 84	1255.00	64.20	0.0381	10.0	0.0038
1, 85	1270.00	63.90	0.0407	9.9	0.0041
1, 86	1285.00	63.60	0.0411	10.0	0.0041
1, 87	1300.00	63.40	0.0413	10.0	0.0041
1, 88	1315.00	63.10	0.0445	10.0	0.0045
1, 89	1330.00	62.90	0.0458	9.9	0.0046
1, 90	1345.00	62.60	0.0456	10.0	0.0046
1, 91	1360.00	62.40	0.0480	10.0	0.0048
1, 92	1375.00	62.10	0.0501	9.9	0.0050
1, 93	1390.00	61.90	0.0510	10.0	0.0051
1, 94	1405.00	61.60	0.0536	10.0	0.0054
1, 95	1420.00	61.40	0.0570	10.0	0.0057
1, 96	1435.00	61.10	0.0587	9.9	0.0059
1, 97	1450.00	60.90	0.0605	10.0	0.0060
1, 98	1465.00	60.70	0.0651	10.0	0.0065
1, 99	1480.00	60.40	0.0694	10.0	0.0070
1, 100	1495.00	60.20	0.0753	9.9	0.0076
1, 101	1510.00	59.90	0.0826	10.1	0.0082
1, 102	1525.00	59.60	0.0856	10.1	0.0085
1, 103	1540.00	59.40	0.0956	10.0	0.0096
1, 104	1555.00	59.10	0.1025	9.9	0.0103
1, 105	1570.00	58.90	0.1089	10.0	0.0109
1, 106	1585.00	58.70	0.1170	10.0	0.0117
1, 107	1600.00	58.40	0.1241	10.0	0.0125
1, 108	1615.00	58.10	0.1333	10.0	0.0134
1, 109	1630.00	57.80	0.1423	10.1	0.0142
1, 110	1645.00	57.60	0.1504	10.0	0.0150
1, 111	1660.00	57.40	0.1607	9.9	0.0162
1, 112	1675.00	57.10	0.1709	10.0	0.0172
1, 113	1690.00	56.90	0.1795	10.0	0.0180
1, 114	1705.00	56.60	0.1908	10.0	0.0191

1, 115	1720.00	56.40	0.2052	10.0	0.0205
1, 116	1735.00	56.10	0.2144	10.1	0.0212
1, 117	1750.00	55.90	0.2213	10.1	0.0220
1, 118	1765.00	55.60	0.2321	9.9	0.0234
1, 119	1780.00	55.40	0.2442	9.9	0.0246
1, 120	1795.00	55.10	0.2551	10.0	0.0255
1, 121	1810.00	54.90	0.2640	10.0	0.0264
1, 122	1825.00	54.60	0.2807	9.9	0.0282
1, 123	1840.00	54.40	0.2889	10.0	0.0290
1, 124	1855.00	54.10	0.2978	10.0	0.0298
1, 125	1870.00	53.90	0.3077	10.0	0.0309
1, 126	1885.00	53.60	0.3202	9.9	0.0323
1, 127	1900.00	53.40	0.3307	10.0	0.0331
1, 128	1915.00	53.10	0.3399	10.0	0.0340
1, 129	1930.00	52.90	0.3506	10.0	0.0352
1, 130	1945.00	52.60	0.3650	10.1	0.0363
1, 131	1960.00	52.40	0.3687	10.0	0.0368
1, 132	1975.00	52.10	0.3764	10.0	0.0376
1, 133	1990.00	51.90	0.3886	9.9	0.0392
1, 134	2005.00	51.60	0.4015	10.1	0.0399
1, 135	2020.00	51.40	0.4082	10.1	0.0405
1, 136	2035.00	51.20	0.4156	10.0	0.0415
1, 137	2050.00	50.90	0.4282	10.0	0.0430
1, 138	2065.00	50.70	0.4358	10.0	0.0437
1, 139	2080.00	50.40	0.4435	10.0	0.0443
1, 140	2095.00	50.10	0.4524	10.0	0.0453
1, 141	2110.00	49.90	0.4663	10.0	0.0468
1, 142	2125.00	49.70	0.4727	10.0	0.0473
1, 143	2140.00	49.40	0.4783	10.0	0.0478
1, 144	2155.00	49.10	0.4877	9.9	0.0491
1, 145	2170.00	48.90	0.4987	10.0	0.0501
1, 146	2185.00	48.60	0.5066	10.0	0.0506

1, 147	2200.00	48.40	0.5128	10.0	0.0512
1, 148	2215.00	48.20	0.5277	10.0	0.0529
1, 149	2230.00	47.90	0.5335	10.0	0.0535
1, 150	2245.00	47.70	0.5420	10.1	0.0538
1, 151	2260.00	47.40	0.5497	10.0	0.0551
1, 152	2275.00	47.10	0.5594	9.9	0.0563
1, 153	2290.00	46.90	0.5714	10.1	0.0567
1, 154	2305.00	46.60	0.5766	10.0	0.0576
1, 155	2320.00	46.40	0.5877	10.0	0.0588
1, 156	2335.00	46.10	0.5987	10.0	0.0597
1, 157	2350.00	45.90	0.6043	10.0	0.0604
1, 158	2365.00	45.60	0.6116	10.0	0.0611
1, 159	2380.00	45.40	0.6212	10.0	0.0624
1, 160	2395.00	45.10	0.6320	10.0	0.0635
1, 161	2410.00	44.90	0.6388	10.0	0.0638
1, 162	2425.00	44.60	0.6466	10.0	0.0647
1, 163	2440.00	44.40	0.6577	9.9	0.0661
1, 164	2455.00	44.10	0.6702	10.1	0.0665
1, 165	2470.00	43.90	0.6745	10.0	0.0674
1, 166	2485.00	43.60	0.6835	10.0	0.0686
1, 167	2500.00	43.40	0.6956	10.0	0.0699
1, 168	2515.00	43.10	0.7071	10.1	0.0702
1, 169	2530.00	42.90	0.7132	10.0	0.0713
1, 170	2545.00	42.60	0.7237	10.0	0.0727
1, 171	2560.00	42.40	0.7361	10.0	0.0739
1, 172	2575.00	42.10	0.7456	10.0	0.0745
1, 173	2590.00	41.90	0.7566	10.0	0.0758
1, 174	2605.00	41.60	0.7684	10.0	0.0772
1, 175	2620.00	41.40	0.7800	10.0	0.0781
1, 176	2635.00	41.10	0.7919	10.1	0.0786
1, 177	2650.00	40.90	0.8037	10.0	0.0805
1, 178	2665.00	40.60	0.8209	10.0	0.0820

1, 179	2680.00	40.40	0.8312	10.0	0.0833
1, 180	2695.00	40.10	0.8427	10.0	0.0842

B3 at shear rate 50s-1

B3.1: Abu-attifel untreated

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.22	85.00	0.158	48.1	0.003
1, 2	25.23	84.80	0.154	49.6	0.003
1, 3	40.24	84.60	0.153	49.9	0.003
1, 4	55.23	84.30	0.154	50.0	0.003
1, 5	70.23	83.90	0.149	50.0	0.003
1, 6	85.21	83.70	0.149	50.0	0.003
1, 7	100.20	83.40	0.153	50.0	0.003
1, 8	115.20	83.20	0.150	50.0	0.003
1, 9	130.20	82.90	0.154	50.0	0.003
1, 10	145.20	82.60	0.154	50.0	0.003
1, 11	160.20	82.40	0.153	50.0	0.003
1, 12	175.20	82.20	0.156	50.0	0.003
1, 13	190.20	81.90	0.155	50.0	0.003
1, 14	205.20	81.60	0.154	50.0	0.003
1, 15	220.20	81.40	0.154	50.0	0.003
1, 16	235.20	81.20	0.157	50.0	0.003

1, 17	250.20	80.90	0.156	50.0	0.003
1, 18	265.20	80.60	0.158	50.0	0.003
1, 19	280.20	80.40	0.160	50.0	0.003
1, 20	295.20	80.10	0.159	50.0	0.003
1, 21	310.20	79.90	0.160	50.0	0.003
1, 22	325.20	79.60	0.158	50.0	0.003
1, 23	340.20	79.40	0.158	50.0	0.003
1, 24	355.20	79.10	0.157	49.9	0.003
1, 25	370.20	78.90	0.151	50.0	0.003
1, 26	385.20	78.70	0.154	50.0	0.003
1, 27	400.20	78.40	0.156	50.0	0.003
1, 28	415.20	78.10	0.162	50.0	0.003
1, 29	430.20	77.90	0.165	50.0	0.003
1, 30	445.20	77.60	0.162	49.9	0.003
1, 31	460.20	77.40	0.171	50.0	0.003
1, 32	475.20	77.20	0.160	50.0	0.003
1, 33	490.20	76.90	0.166	50.0	0.003
1, 34	505.20	76.60	0.172	50.0	0.003
1, 35	520.20	76.40	0.170	50.0	0.003
1, 36	535.20	76.20	0.171	50.0	0.003
1, 37	550.20	75.90	0.167	50.0	0.003
1, 38	565.20	75.60	0.182	50.0	0.004
1, 39	580.20	75.40	0.167	50.0	0.003
1, 40	595.20	75.10	0.175	50.0	0.004
1, 41	610.20	74.90	0.162	50.0	0.003
1, 42	625.20	74.60	0.161	50.0	0.003
1, 43	640.20	74.40	0.168	50.0	0.003
1, 44	655.20	74.10	0.178	50.0	0.004
1, 45	670.20	73.90	0.179	50.0	0.004
1, 46	685.20	73.60	0.171	50.0	0.003
1, 47	700.20	73.40	0.176	50.0	0.004
1, 48	715.20	73.10	0.177	50.0	0.004
1, 49	730.20	72.90	0.174	50.0	0.003
1, 50	745.20	72.60	0.186	50.0	0.004
1, 51	760.20	72.40	0.180	50.0	0.004
1, 52	775.20	72.20	0.192	50.0	0.004
1, 53	790.20	71.90	0.193	50.0	0.004
1, 54	805.20	71.60	0.204	50.0	0.004
1, 55	820.20	71.40	0.204	50.0	0.004
1, 56	835.20	71.10	0.213	50.0	0.004
1, 57	850.20	70.90	0.210	49.9	0.004
1, 58	865.20	70.60	0.214	50.0	0.004
1, 59	880.20	70.40	0.214	50.0	0.004
1, 60	895.20	70.10	0.218	50.0	0.004

1, 61	910.10	69.90	0.210	50.0	0.004
1, 62	925.10	69.60	0.221	50.0	0.004
1, 63	940.10	69.40	0.223	50.0	0.004
1, 64	955.10	69.10	0.214	50.0	0.004
1, 65	970.10	68.90	0.220	50.0	0.004
1, 66	985.10	68.60	0.229	49.9	0.005
1, 67	1000.00	68.40	0.230	50.0	0.005
1, 68	1015.00	68.10	0.223	50.0	0.004
1, 69	1030.00	67.90	0.227	50.0	0.005
1, 70	1045.00	67.70	0.220	50.0	0.004
1, 71	1060.00	67.40	0.229	49.9	0.005
1, 72	1075.00	67.10	0.231	50.0	0.005
1, 73	1090.00	66.90	0.229	50.0	0.005
1, 74	1105.00	66.60	0.245	49.9	0.005
1, 75	1120.00	66.40	0.236	50.0	0.005
1, 76	1135.00	66.20	0.243	50.0	0.005
1, 77	1150.00	65.90	0.243	49.9	0.005
1, 78	1165.00	65.60	0.250	50.1	0.005
1, 79	1180.00	65.40	0.254	49.9	0.005
1, 80	1195.00	65.20	0.259	49.9	0.005
1, 81	1210.00	64.90	0.273	49.9	0.005
1, 82	1225.00	64.70	0.286	50.0	0.006
1, 83	1240.00	64.40	0.296	49.9	0.006
1, 84	1255.00	64.10	0.314	49.9	0.006
1, 85	1270.00	63.90	0.329	50.0	0.007
1, 86	1285.00	63.60	0.344	49.8	0.007
1, 87	1300.00	63.40	0.362	49.9	0.007
1, 88	1315.00	63.10	0.377	49.9	0.008
1, 89	1330.00	62.90	0.390	49.9	0.008
1, 90	1345.00	62.70	0.414	50.1	0.008
1, 91	1360.00	62.40	0.427	50.0	0.009
1, 92	1375.00	62.10	0.441	49.9	0.009
1, 93	1390.00	61.90	0.460	49.8	0.009
1, 94	1405.00	61.60	0.477	49.9	0.010
1, 95	1420.00	61.40	0.493	50.1	0.010
1, 96	1435.00	61.10	0.510	50.0	0.010
1, 97	1450.00	60.90	0.528	49.9	0.011
1, 98	1465.00	60.60	0.547	49.9	0.011
1, 99	1480.00	60.40	0.566	49.8	0.011
1, 100	1495.00	60.10	0.589	49.9	0.012
1, 101	1510.00	59.90	0.610	50.1	0.012
1, 102	1525.00	59.60	0.626	50.1	0.013
1, 103	1540.00	59.40	0.650	50.1	0.013
1, 104	1555.00	59.10	0.666	50.1	0.013

1, 105	1570.00	58.90	0.691	50.2	0.014
1, 106	1585.00	58.60	0.706	50.1	0.014
1, 107	1600.00	58.40	0.727	50.1	0.015
1, 108	1615.00	58.10	0.749	50.2	0.015
1, 109	1630.00	57.90	0.773	50.2	0.015
1, 110	1645.00	57.70	0.796	50.2	0.016
1, 111	1660.00	57.40	0.818	50.0	0.016
1, 112	1675.00	57.10	0.833	49.9	0.017
1, 113	1690.00	56.90	0.855	49.9	0.017
1, 114	1705.00	56.60	0.876	49.9	0.018
1, 115	1720.00	56.40	0.896	49.9	0.018
1, 116	1735.00	56.10	0.917	49.9	0.018
1, 117	1750.00	55.90	0.943	50.2	0.019
1, 118	1765.00	55.60	0.965	50.1	0.019
1, 119	1780.00	55.40	0.979	49.9	0.020
1, 120	1795.00	55.10	1.001	49.9	0.020
1, 121	1810.00	54.90	1.022	49.9	0.020
1, 122	1825.00	54.60	1.043	50.1	0.021
1, 123	1840.00	54.40	1.066	49.9	0.021
1, 124	1855.00	54.10	1.087	49.9	0.022
1, 125	1870.00	53.90	1.106	49.9	0.022
1, 126	1885.00	53.70	1.136	50.0	0.023
1, 127	1900.00	53.40	1.150	49.9	0.023
1, 128	1915.00	53.20	1.173	49.9	0.023
1, 129	1930.00	52.90	1.198	50.1	0.024
1, 130	1945.00	52.60	1.218	49.9	0.024
1, 131	1960.00	52.40	1.239	49.9	0.025
1, 132	1975.00	52.10	1.268	50.2	0.025
1, 133	1990.00	51.90	1.289	49.9	0.026
1, 134	2005.00	51.60	1.309	49.9	0.026
1, 135	2020.00	51.40	1.334	50.1	0.027
1, 136	2035.00	51.10	1.358	49.9	0.027
1, 137	2050.00	50.90	1.382	49.9	0.028
1, 138	2065.00	50.60	1.406	50.1	0.028
1, 139	2080.00	50.40	1.442	50.1	0.029
1, 140	2095.00	50.10	1.457	49.9	0.029
1, 141	2110.00	49.90	1.481	50.0	0.030
1, 142	2125.00	49.60	1.510	49.9	0.030
1, 143	2140.00	49.40	1.537	49.9	0.031
1, 144	2155.00	49.10	1.563	49.9	0.031
1, 145	2170.00	48.90	1.601	50.1	0.032
1, 146	2185.00	48.60	1.620	49.9	0.032
1, 147	2200.00	48.40	1.649	50.1	0.033
1, 148	2215.00	48.10	1.678	49.9	0.034

1, 149	2230.00	47.90	1.707	49.9	0.034
1, 150	2245.00	47.60	1.748	50.1	0.035
1, 151	2260.00	47.40	1.769	49.9	0.035
1, 152	2275.00	47.10	1.801	49.9	0.036
1, 153	2290.00	46.90	1.844	50.0	0.037
1, 154	2305.00	46.70	1.868	49.9	0.037
1, 155	2320.00	46.40	1.901	49.9	0.038
1, 156	2335.00	46.10	1.941	50.2	0.039
1, 157	2350.00	45.90	1.972	49.9	0.040
1, 158	2365.00	45.70	2.008	49.9	0.040
1, 159	2380.00	45.40	2.046	49.9	0.041
1, 160	2395.00	45.10	2.092	50.2	0.042
1, 161	2410.00	44.90	2.127	49.9	0.043
1, 162	2425.00	44.60	2.167	49.9	0.043
1, 163	2440.00	44.40	2.207	49.9	0.044
1, 164	2455.00	44.20	2.266	50.3	0.045
1, 165	2470.00	43.90	2.307	49.9	0.046
1, 166	2485.00	43.70	2.345	49.9	0.047
1, 167	2500.00	43.40	2.401	49.9	0.048
1, 168	2515.00	43.10	2.452	49.9	0.049
1, 169	2530.00	42.90	2.510	50.1	0.050
1, 170	2545.00	42.70	2.585	50.3	0.051
1, 171	2560.00	42.40	2.648	50.2	0.053
1, 172	2575.00	42.10	2.722	50.2	0.054
1, 173	2590.00	41.90	2.794	50.3	0.056
1, 174	2605.00	41.70	2.869	50.1	0.057
1, 175	2620.00	41.40	2.949	49.8	0.059
1, 176	2635.00	41.20	3.062	49.8	0.061
1, 177	2650.00	40.90	3.176	50.1	0.063
1, 178	2665.00	40.60	3.297	49.8	0.066
1, 179	2680.00	40.40	3.440	49.8	0.069
1, 180	2695.00	40.10	3.627	49.8	0.073
1, 181	2710.00	39.90	3.849	49.8	0.077
1, 182	2725.00	39.70	4.090	50.1	0.082
1, 183	2740.00	39.40	4.374	49.9	0.088
1, 184	2755.00	39.20	4.711	49.8	0.095
1, 185	2770.00	38.90	5.112	49.9	0.102
1, 186	2785.00	38.60	5.547	49.9	0.111
1, 187	2800.00	38.40	6.047	50.0	0.121
1, 188	2815.00	38.20	6.647	50.0	0.133
1, 189	2830.00	37.90	7.313	50.0	0.146
1, 190	2845.00	37.60	8.075	50.0	0.161
1, 191	2860.00	37.40	8.973	49.9	0.180
1, 192	2875.00	37.20	10.010	50.0	0.200

1, 193	2890.00	36.90	11.150	49.9	0.223
1, 194	2905.00	36.70	12.520	50.0	0.251
1, 195	2920.00	36.40	14.080	50.2	0.281
1, 196	2935.00	36.10	15.790	50.2	0.314
1, 197	2950.00	35.90	17.640	49.9	0.354
1, 198	2965.00	35.70	19.670	49.7	0.396
1, 199	2980.00	35.40	21.890	49.9	0.439
1, 200	2995.00	35.20	24.240	50.2	0.483
1, 201	3010.00	34.90	26.560	49.9	0.532
1, 202	3025.00	34.70	28.960	49.9	0.581
1, 203	3040.00	34.40	31.460	50.1	0.628
1, 204	3055.00	34.20	33.870	50.1	0.677
1, 205	3070.00	33.90	36.300	49.8	0.729
1, 206	3085.00	33.70	38.830	50.0	0.777
1, 207	3100.00	33.40	41.420	49.8	0.833
1, 208	3115.00	33.10	44.160	49.9	0.885
1, 209	3130.00	32.90	47.030	49.9	0.943
1, 210	3145.00	32.60	50.010	49.8	1.004
1, 211	3160.00	32.40	53.290	49.9	1.069
1, 212	3175.00	32.20	56.700	50.0	1.134
1, 213	3190.00	31.90	60.490	50.1	1.208
1, 214	3205.00	31.70	64.820	49.8	1.302
1, 215	3220.00	31.40	69.350	49.9	1.390
1, 216	3235.00	31.10	74.260	50.1	1.481
1, 217	3250.00	30.90	79.470	50.0	1.589
1, 218	3265.00	30.70	85.260	49.8	1.712
1, 219	3280.00	30.40	91.640	50.0	1.832
1, 220	3295.00	30.20	98.590	50.1	1.967

B3.2: Abu-attifel treated with 500PPM ROA

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.32	85.00	0.1446	47.2	0.0031
1, 2	25.33	84.90	0.1275	49.9	0.0026
1, 3	40.33	84.50	0.1282	50.0	0.0026
1, 4	55.32	84.20	0.1223	50.0	0.0024
1, 5	70.31	83.90	0.1206	50.0	0.0024
1, 6	85.32	83.70	0.1223	50.0	0.0024
1, 7	100.30	83.40	0.1231	50.0	0.0025
1, 8	115.30	83.10	0.1269	50.0	0.0025
1, 9	130.30	82.90	0.1244	49.9	0.0025
1, 10	145.30	82.60	0.1300	50.0	0.0026
1, 11	160.30	82.40	0.1270	50.0	0.0025

1, 12	175.30	82.10	0.1288	50.0	0.0026
1, 13	190.30	81.90	0.1272	50.0	0.0025
1, 14	205.30	81.60	0.1302	50.0	0.0026
1, 15	220.30	81.40	0.1273	50.0	0.0025
1, 16	235.30	81.10	0.1322	49.9	0.0026
1, 17	250.30	80.90	0.1328	50.0	0.0027
1, 18	265.30	80.60	0.1319	50.0	0.0026
1, 19	280.30	80.40	0.1321	50.0	0.0026
1, 20	295.30	80.10	0.1263	50.0	0.0025
1, 21	310.30	79.90	0.1298	50.0	0.0026
1, 22	325.30	79.60	0.1305	50.0	0.0026
1, 23	340.30	79.40	0.1250	49.9	0.0025
1, 24	355.30	79.10	0.1243	50.0	0.0025
1, 25	370.30	78.90	0.1278	50.0	0.0026
1, 26	385.30	78.60	0.1331	50.0	0.0027
1, 27	400.30	78.40	0.1384	50.0	0.0028
1, 28	415.30	78.10	0.1371	50.0	0.0027
1, 29	430.30	77.90	0.1366	50.0	0.0027
1, 30	445.30	77.60	0.1341	50.0	0.0027
1, 31	460.30	77.40	0.1339	50.0	0.0027
1, 32	475.30	77.10	0.1339	50.0	0.0027
1, 33	490.30	76.90	0.1376	50.0	0.0028
1, 34	505.30	76.60	0.1468	50.0	0.0029
1, 35	520.30	76.40	0.1379	50.0	0.0028
1, 36	535.30	76.10	0.1401	50.0	0.0028
1, 37	550.30	75.90	0.1429	50.0	0.0029
1, 38	565.30	75.60	0.1487	50.0	0.0030
1, 39	580.30	75.40	0.1323	50.0	0.0026
1, 40	595.30	75.10	0.1445	50.0	0.0029
1, 41	610.30	74.90	0.1428	49.9	0.0029
1, 42	625.30	74.60	0.1512	50.0	0.0030
1, 43	640.30	74.40	0.1479	50.0	0.0030
1, 44	655.30	74.10	0.1338	49.9	0.0027
1, 45	670.30	73.90	0.1505	50.0	0.0030
1, 46	685.30	73.60	0.1588	50.0	0.0032
1, 47	700.30	73.40	0.1442	50.0	0.0029
1, 48	715.30	73.10	0.1663	50.0	0.0033
1, 49	730.30	72.90	0.1700	50.0	0.0034
1, 50	745.30	72.70	0.1700	50.0	0.0034
1, 51	760.30	72.40	0.1727	49.9	0.0035
1, 52	775.30	72.10	0.1778	50.0	0.0036
1, 53	790.30	71.90	0.1836	50.1	0.0037
1, 54	805.30	71.60	0.1783	50.0	0.0036
1, 55	820.30	71.40	0.1855	49.9	0.0037
1, 56	835.30	71.10	0.1847	49.9	0.0037
1, 57	850.30	70.90	0.1891	50.0	0.0038
1, 58	865.30	70.70	0.1893	49.9	0.0038
1, 59	880.30	70.40	0.1893	49.9	0.0038

1, 60	895.30	70.20	0.1961	49.9	0.0039
1, 61	910.30	69.90	0.1934	50.0	0.0039
1, 62	925.20	69.60	0.2023	50.0	0.0040
1, 63	940.20	69.40	0.2105	49.9	0.0042
1, 64	955.20	69.20	0.2233	49.9	0.0045
1, 65	970.20	68.90	0.2349	49.9	0.0047
1, 66	985.20	68.70	0.2533	49.9	0.0051
1, 67	1000.00	68.40	0.2573	50.0	0.0051
1, 68	1015.00	68.10	0.2648	50.0	0.0053
1, 69	1030.00	67.90	0.2847	49.9	0.0057
1, 70	1045.00	67.60	0.2994	49.9	0.0060
1, 71	1060.00	67.40	0.3058	49.9	0.0061
1, 72	1075.00	67.10	0.3291	50.0	0.0066
1, 73	1090.00	66.90	0.3392	50.0	0.0068
1, 74	1105.00	66.70	0.3570	49.9	0.0072
1, 75	1120.00	66.40	0.3691	50.0	0.0074
1, 76	1135.00	66.10	0.3863	49.9	0.0077
1, 77	1150.00	65.90	0.4001	49.9	0.0080
1, 78	1165.00	65.60	0.4202	49.9	0.0084
1, 79	1180.00	65.40	0.4310	49.8	0.0086
1, 80	1195.00	65.10	0.4487	50.1	0.0090
1, 81	1210.00	64.90	0.4706	49.9	0.0094
1, 82	1225.00	64.70	0.4872	49.9	0.0098
1, 83	1240.00	64.40	0.5045	50.0	0.0101
1, 84	1255.00	64.10	0.5239	49.9	0.0105
1, 85	1270.00	63.90	0.5494	49.9	0.0110
1, 86	1285.00	63.70	0.5710	50.1	0.0114
1, 87	1300.00	63.40	0.5885	50.0	0.0118
1, 88	1315.00	63.10	0.6097	49.9	0.0122
1, 89	1330.00	62.90	0.6298	49.8	0.0126
1, 90	1345.00	62.60	0.6514	49.8	0.0131
1, 91	1360.00	62.40	0.6742	49.9	0.0135
1, 92	1375.00	62.10	0.6915	49.9	0.0139
1, 93	1390.00	61.90	0.7093	49.9	0.0142
1, 94	1405.00	61.60	0.7273	49.9	0.0146
1, 95	1420.00	61.40	0.7439	50.0	0.0149
1, 96	1435.00	61.20	0.7663	50.2	0.0153
1, 97	1450.00	60.90	0.7861	50.0	0.0157
1, 98	1465.00	60.60	0.7971	49.9	0.0160
1, 99	1480.00	60.40	0.8141	49.9	0.0163
1, 100	1495.00	60.10	0.8338	50.2	0.0166
1, 101	1510.00	59.90	0.8463	49.9	0.0170
1, 102	1525.00	59.70	0.8617	49.9	0.0173
1, 103	1540.00	59.40	0.8843	50.2	0.0176
1, 104	1555.00	59.20	0.8946	49.9	0.0179
1, 105	1570.00	58.90	0.9100	49.9	0.0182
1, 106	1585.00	58.60	0.9324	50.2	0.0186
1, 107	1600.00	58.40	0.9413	49.9	0.0189

1, 108	1615.00	58.20	0.9541	50.0	0.0191
1, 109	1630.00	57.90	0.9686	49.9	0.0194
1, 110	1645.00	57.60	0.9817	50.0	0.0197
1, 111	1660.00	57.40	0.9977	49.9	0.0200
1, 112	1675.00	57.10	1.0110	49.9	0.0203
1, 113	1690.00	56.90	1.0260	49.9	0.0206
1, 114	1705.00	56.70	1.0380	50.0	0.0208
1, 115	1720.00	56.40	1.0520	49.9	0.0211
1, 116	1735.00	56.20	1.0650	50.1	0.0213
1, 117	1750.00	55.90	1.0790	49.9	0.0216
1, 118	1765.00	55.60	1.0920	50.1	0.0218
1, 119	1780.00	55.40	1.1050	49.9	0.0221
1, 120	1795.00	55.10	1.1200	49.9	0.0224
1, 121	1810.00	54.90	1.1310	49.9	0.0227
1, 122	1825.00	54.70	1.1450	49.9	0.0229
1, 123	1840.00	54.40	1.1590	49.9	0.0232
1, 124	1855.00	54.20	1.1730	49.9	0.0235
1, 125	1870.00	53.90	1.1860	49.9	0.0238
1, 126	1885.00	53.60	1.2000	49.9	0.0240
1, 127	1900.00	53.40	1.2230	50.2	0.0244
1, 128	1915.00	53.20	1.2290	49.9	0.0246
1, 129	1930.00	52.90	1.2430	49.9	0.0249
1, 130	1945.00	52.60	1.2580	49.9	0.0252
1, 131	1960.00	52.40	1.2720	49.9	0.0255
1, 132	1975.00	52.10	1.2900	50.2	0.0257
1, 133	1990.00	51.90	1.3010	49.9	0.0261
1, 134	2005.00	51.60	1.3240	50.0	0.0265
1, 135	2020.00	51.40	1.3310	49.9	0.0267
1, 136	2035.00	51.20	1.3460	49.9	0.0270
1, 137	2050.00	50.90	1.3600	50.0	0.0272
1, 138	2065.00	50.60	1.3760	49.9	0.0276
1, 139	2080.00	50.40	1.3990	50.3	0.0278
1, 140	2095.00	50.10	1.4060	49.9	0.0282
1, 141	2110.00	49.90	1.3680	47.5	0.0288
1, 142	2125.00	49.60	1.4370	49.9	0.0288
1, 143	2140.00	49.40	1.4520	49.9	0.0291
1, 144	2155.00	49.10	1.4690	49.9	0.0294
1, 145	2170.00	48.90	1.4850	49.9	0.0298
1, 146	2185.00	48.70	1.5030	49.9	0.0301
1, 147	2200.00	48.40	1.5210	49.9	0.0305
1, 148	2215.00	48.10	1.5380	49.9	0.0308
1, 149	2230.00	47.90	1.5550	49.9	0.0311
1, 150	2245.00	47.60	1.5700	49.9	0.0314
1, 151	2260.00	47.40	1.5880	49.9	0.0318
1, 152	2275.00	47.20	1.6050	49.9	0.0322
1, 153	2290.00	46.90	1.6250	49.9	0.0326
1, 154	2305.00	46.60	1.6440	49.9	0.0329
1, 155	2320.00	46.40	1.6620	49.9	0.0333

1, 156	2335.00	46.10	1.6800	50.2	0.0335
1, 157	2350.00	45.90	1.6950	49.9	0.0339
1, 158	2365.00	45.60	1.7250	50.0	0.0345
1, 159	2380.00	45.40	1.7370	49.9	0.0348
1, 160	2395.00	45.10	1.7560	49.9	0.0352
1, 161	2410.00	44.90	1.7750	49.9	0.0356
1, 162	2425.00	44.60	1.7930	49.9	0.0359
1, 163	2440.00	44.40	1.8220	50.3	0.0363
1, 164	2455.00	44.10	1.8360	49.9	0.0368
1, 165	2470.00	43.90	1.8660	50.4	0.0371
1, 166	2485.00	43.60	1.8770	49.9	0.0376
1, 167	2500.00	43.40	1.9000	49.9	0.0381
1, 168	2515.00	43.20	1.9210	49.9	0.0385
1, 169	2530.00	42.90	1.9410	49.9	0.0389
1, 170	2545.00	42.60	1.9760	50.3	0.0393
1, 171	2560.00	42.40	1.9890	49.9	0.0398
1, 172	2575.00	42.10	2.0120	50.0	0.0403
1, 173	2590.00	41.90	2.0380	49.9	0.0408
1, 174	2605.00	41.60	2.0710	50.0	0.0415
1, 175	2620.00	41.40	2.0900	49.9	0.0419
1, 176	2635.00	41.20	2.1250	50.1	0.0424
1, 177	2650.00	40.90	2.1430	49.9	0.0429
1, 178	2665.00	40.70	2.1740	50.1	0.0434
1, 179	2680.00	40.40	2.1980	49.9	0.0441
1, 180	2695.00	40.10	2.2350	49.9	0.0448

B3.3: Abu-attifel treated with 1000PPM ROA

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.32	85.00	0.1581	48.4	0.0033
1, 2	25.33	84.80	0.1548	49.8	0.0031
1, 3	40.33	84.60	0.1534	49.9	0.0031
1, 4	55.31	84.20	0.1533	50.0	0.0031
1, 5	70.31	83.90	0.1532	50.0	0.0031
1, 6	85.31	83.60	0.1539	50.0	0.0031
1, 7	100.30	83.40	0.1547	49.9	0.0031
1, 8	115.30	83.10	0.1554	50.0	0.0031
1, 9	130.30	82.90	0.1558	50.0	0.0031
1, 10	145.30	82.70	0.1561	50.0	0.0031
1, 11	160.30	82.40	0.1572	50.0	0.0031
1, 12	175.30	82.20	0.1576	50.0	0.0032
1, 13	190.30	81.90	0.1581	50.0	0.0032
1, 14	205.30	81.60	0.1591	50.0	0.0032
1, 15	220.30	81.40	0.1599	50.0	0.0032

1, 16	235.30	81.10	0.1599	50.0	0.0032
1, 17	250.30	80.90	0.1602	50.0	0.0032
1, 18	265.30	80.60	0.1606	50.0	0.0032
1, 19	280.30	80.40	0.1619	50.0	0.0032
1, 20	295.30	80.10	0.1635	50.0	0.0033
1, 21	310.30	79.90	0.1643	49.9	0.0033
1, 22	325.30	79.70	0.1645	50.0	0.0033
1, 23	340.30	79.40	0.1651	50.0	0.0033
1, 24	355.30	79.10	0.1656	50.0	0.0033
1, 25	370.30	78.90	0.1664	50.0	0.0033
1, 26	385.30	78.60	0.1675	50.0	0.0034
1, 27	400.30	78.40	0.1690	50.0	0.0034
1, 28	415.30	78.10	0.1696	49.9	0.0034
1, 29	430.30	77.90	0.1695	50.0	0.0034
1, 30	445.30	77.60	0.1706	50.0	0.0034
1, 31	460.30	77.40	0.1713	50.0	0.0034
1, 32	475.30	77.20	0.1726	50.0	0.0035
1, 33	490.30	76.90	0.1735	50.0	0.0035
1, 34	505.30	76.60	0.1745	50.0	0.0035
1, 35	520.30	76.40	0.1750	50.0	0.0035
1, 36	535.30	76.10	0.1760	50.0	0.0035
1, 37	550.30	75.90	0.1765	50.0	0.0035
1, 38	565.30	75.60	0.1776	50.0	0.0036
1, 39	580.30	75.40	0.1787	50.0	0.0036
1, 40	595.30	75.20	0.1776	50.0	0.0036
1, 41	610.30	74.90	0.1797	50.0	0.0036
1, 42	625.30	74.60	0.1807	50.0	0.0036
1, 43	640.30	74.40	0.1818	50.0	0.0036
1, 44	655.30	74.20	0.1836	50.0	0.0037
1, 45	670.30	73.90	0.1850	50.0	0.0037
1, 46	685.30	73.60	0.1857	50.0	0.0037
1, 47	700.30	73.40	0.1862	50.0	0.0037
1, 48	715.30	73.10	0.1868	50.0	0.0037
1, 49	730.30	72.90	0.1884	50.0	0.0038
1, 50	745.30	72.60	0.1899	50.0	0.0038
1, 51	760.30	72.40	0.1912	49.9	0.0038
1, 52	775.30	72.10	0.1928	49.9	0.0039
1, 53	790.30	71.90	0.1942	49.9	0.0039
1, 54	805.30	71.60	0.1964	49.9	0.0039
1, 55	820.30	71.40	0.2006	50.0	0.0040
1, 56	835.30	71.10	0.2105	50.2	0.0042
1, 57	850.30	70.90	0.2158	49.8	0.0043
1, 58	865.30	70.60	0.2274	50.0	0.0045
1, 59	880.30	70.40	0.2366	50.0	0.0047

1, 60	895.30	70.10	0.2510	49.9	0.0050
1, 61	910.30	69.90	0.2636	50.0	0.0053
1, 62	925.20	69.60	0.2721	50.1	0.0054
1, 63	940.20	69.40	0.2798	50.1	0.0056
1, 64	955.20	69.10	0.2906	50.1	0.0058
1, 65	970.20	68.90	0.3039	50.1	0.0061
1, 66	985.20	68.70	0.3092	49.9	0.0062
1, 67	1000.00	68.40	0.3160	49.9	0.0063
1, 68	1015.00	68.10	0.3268	49.9	0.0066
1, 69	1030.00	67.90	0.3346	49.9	0.0067
1, 70	1045.00	67.60	0.3460	50.1	0.0069
1, 71	1060.00	67.40	0.3536	49.9	0.0071
1, 72	1075.00	67.20	0.3624	49.9	0.0073
1, 73	1090.00	66.80	0.3693	50.0	0.0074
1, 74	1105.00	66.60	0.3821	50.1	0.0076
1, 75	1120.00	66.40	0.3886	49.9	0.0078
1, 76	1135.00	66.10	0.3942	49.9	0.0079
1, 77	1150.00	65.90	0.4006	50.1	0.0080
1, 78	1165.00	65.60	0.4085	49.9	0.0082
1, 79	1180.00	65.40	0.4160	49.9	0.0083
1, 80	1195.00	65.10	0.4182	50.0	0.0084
1, 81	1210.00	64.80	0.4401	50.0	0.0088
1, 82	1225.00	64.60	0.4356	49.9	0.0087
1, 83	1240.00	64.40	0.4456	50.0	0.0089
1, 84	1255.00	64.10	0.4610	50.0	0.0092
1, 85	1270.00	63.90	0.4755	49.9	0.0095
1, 86	1285.00	63.60	0.4834	50.0	0.0097
1, 87	1300.00	63.40	0.4935	49.9	0.0099
1, 88	1315.00	63.10	0.5048	49.9	0.0101
1, 89	1330.00	62.90	0.5103	50.2	0.0102
1, 90	1345.00	62.60	0.5261	49.9	0.0105
1, 91	1360.00	62.40	0.5375	49.9	0.0108
1, 92	1375.00	62.10	0.5463	50.2	0.0109
1, 93	1390.00	61.90	0.5573	49.9	0.0112
1, 94	1405.00	61.70	0.5606	50.0	0.0112
1, 95	1420.00	61.40	0.5799	49.9	0.0116
1, 96	1435.00	61.10	0.5789	49.9	0.0116
1, 97	1450.00	60.90	0.5942	49.9	0.0119
1, 98	1465.00	60.60	0.5948	49.9	0.0119
1, 99	1480.00	60.40	0.6255	50.0	0.0125
1, 100	1495.00	60.10	0.6292	49.9	0.0126
1, 101	1510.00	59.90	0.6563	50.2	0.0131
1, 102	1525.00	59.60	0.6612	49.9	0.0133
1, 103	1540.00	59.40	0.6731	49.9	0.0135

1, 104	1555.00	59.10	0.6863	49.9	0.0138
1, 105	1570.00	58.90	0.6959	50.1	0.0139
1, 106	1585.00	58.60	0.7111	49.9	0.0142
1, 107	1600.00	58.40	0.7192	50.2	0.0143
1, 108	1615.00	58.10	0.7352	49.9	0.0147
1, 109	1630.00	57.90	0.7428	50.0	0.0149
1, 110	1645.00	57.60	0.7492	49.9	0.0150
1, 111	1660.00	57.40	0.7617	49.9	0.0153
1, 112	1675.00	57.20	0.7730	49.9	0.0155
1, 113	1690.00	56.90	0.7795	49.9	0.0156
1, 114	1705.00	56.60	0.7816	50.1	0.0156
1, 115	1720.00	56.40	0.7943	49.9	0.0159
1, 116	1735.00	56.20	0.8142	50.2	0.0162
1, 117	1750.00	55.90	0.8131	49.9	0.0163
1, 118	1765.00	55.60	0.8205	49.9	0.0164
1, 119	1780.00	55.40	0.8317	49.9	0.0167
1, 120	1795.00	55.10	0.8485	49.9	0.0170
1, 121	1810.00	54.90	0.8577	50.0	0.0172
1, 122	1825.00	54.70	0.8574	49.9	0.0172
1, 123	1840.00	54.40	0.8701	49.9	0.0174
1, 124	1855.00	54.20	0.8832	49.9	0.0177
1, 125	1870.00	53.90	0.8851	49.9	0.0177
1, 126	1885.00	53.60	0.9008	50.0	0.0180
1, 127	1900.00	53.40	0.9067	49.9	0.0182
1, 128	1915.00	53.10	0.9168	49.9	0.0184
1, 129	1930.00	52.90	0.9251	49.9	0.0185
1, 130	1945.00	52.60	0.9314	49.9	0.0187
1, 131	1960.00	52.40	0.9355	49.9	0.0188
1, 132	1975.00	52.10	0.9453	49.9	0.0189
1, 133	1990.00	51.90	0.9554	49.9	0.0191
1, 134	2005.00	51.60	0.9659	50.0	0.0193
1, 135	2020.00	51.40	0.9775	49.9	0.0196
1, 136	2035.00	51.10	0.9920	50.0	0.0199
1, 137	2050.00	50.90	0.9962	49.9	0.0200
1, 138	2065.00	50.60	1.0070	49.9	0.0202
1, 139	2080.00	50.40	1.0160	50.0	0.0203
1, 140	2095.00	50.10	1.0280	49.9	0.0206
1, 141	2110.00	49.90	1.0510	49.9	0.0211
1, 142	2125.00	49.60	1.0580	49.9	0.0212
1, 143	2140.00	49.40	1.0690	49.9	0.0214
1, 144	2155.00	49.20	1.0840	50.3	0.0216
1, 145	2170.00	48.90	1.0920	49.9	0.0219
1, 146	2185.00	48.60	1.1060	49.9	0.0222
1, 147	2200.00	48.40	1.1170	49.9	0.0224

1, 148	2215.00	48.10	1.1240	49.9	0.0225
1, 149	2230.00	47.90	1.1410	50.2	0.0227
1, 150	2245.00	47.60	1.1490	49.9	0.0230
1, 151	2260.00	47.40	1.1610	50.0	0.0233
1, 152	2275.00	47.10	1.1720	49.9	0.0235
1, 153	2290.00	46.90	1.1840	49.9	0.0237
1, 154	2305.00	46.70	1.1960	50.1	0.0239
1, 155	2320.00	46.40	1.2090	49.9	0.0242
1, 156	2335.00	46.10	1.2230	49.9	0.0245
1, 157	2350.00	45.90	1.2360	49.9	0.0248
1, 158	2365.00	45.60	1.2500	49.9	0.0251
1, 159	2380.00	45.40	1.2640	49.9	0.0253
1, 160	2395.00	45.10	1.2790	49.9	0.0256
1, 161	2410.00	44.90	1.2920	49.9	0.0259
1, 162	2425.00	44.60	1.3070	49.9	0.0262
1, 163	2440.00	44.40	1.3220	49.9	0.0265
1, 164	2455.00	44.10	1.3370	49.9	0.0268
1, 165	2470.00	43.90	1.3540	49.9	0.0271
1, 166	2485.00	43.60	1.3800	50.2	0.0275
1, 167	2500.00	43.40	1.3880	49.9	0.0278
1, 168	2515.00	43.10	1.4130	50.3	0.0281
1, 169	2530.00	42.90	1.4210	50.0	0.0284
1, 170	2545.00	42.60	1.4470	50.0	0.0290
1, 171	2560.00	42.40	1.4610	49.9	0.0293
1, 172	2575.00	42.10	1.4900	50.1	0.0297
1, 173	2590.00	41.90	1.4990	49.9	0.0301
1, 174	2605.00	41.60	1.5320	50.3	0.0305
1, 175	2620.00	41.40	1.5440	49.9	0.0309
1, 176	2635.00	41.10	1.5700	50.1	0.0313
1, 177	2650.00	40.90	1.5950	49.9	0.0320
1, 178	2665.00	40.70	1.6220	49.9	0.0325
1, 179	2680.00	40.40	1.6610	50.2	0.0331
1, 180	2695.00	40.10	1.6970	50.0	0.0340

B3.4: Abu-attifel treated with 2000PPM PPD

	Time s	Temperature °C	Shear Stress Pa	Shear Rate 1/s	Viscosity Pas
1, 1	10.22	85.00	0.1349	48.3	0.0028
1, 2	25.23	84.90	0.1344	49.7	0.0027
1, 3	40.23	84.60	0.1311	50.0	0.0026
1, 4	55.24	84.30	0.1282	50.0	0.0026
1, 5	70.24	84.00	0.1277	49.9	0.0026

1, 6	85.22	83.60	0.1250	49.9	0.0025
1, 7	100.20	83.40	0.1270	50.0	0.0025
1, 8	115.20	83.10	0.1281	50.0	0.0026
1, 9	130.20	82.90	0.1288	50.0	0.0026
1, 10	145.20	82.60	0.1288	50.0	0.0026
1, 11	160.20	82.40	0.1282	50.0	0.0026
1, 12	175.20	82.20	0.1290	49.9	0.0026
1, 13	190.20	81.90	0.1292	50.0	0.0026
1, 14	205.20	81.70	0.1277	50.0	0.0026
1, 15	220.20	81.40	0.1286	50.0	0.0026
1, 16	235.20	81.10	0.1295	50.0	0.0026
1, 17	250.20	80.90	0.1314	50.0	0.0026
1, 18	265.20	80.60	0.1327	50.0	0.0027
1, 19	280.20	80.40	0.1301	49.9	0.0026
1, 20	295.20	80.10	0.1327	49.9	0.0027
1, 21	310.20	79.80	0.1310	50.0	0.0026
1, 22	325.20	79.60	0.1315	50.0	0.0026
1, 23	340.20	79.40	0.1287	50.0	0.0026
1, 24	355.20	79.10	0.1288	50.0	0.0026
1, 25	370.20	78.90	0.1258	50.0	0.0025
1, 26	385.20	78.70	0.1298	50.0	0.0026
1, 27	400.20	78.40	0.1389	50.0	0.0028
1, 28	415.20	78.10	0.1384	50.0	0.0028
1, 29	430.20	77.90	0.1345	50.0	0.0027
1, 30	445.20	77.60	0.1404	50.0	0.0028
1, 31	460.20	77.40	0.1395	50.0	0.0028
1, 32	475.20	77.10	0.1405	50.0	0.0028
1, 33	490.20	76.90	0.1402	50.0	0.0028
1, 34	505.20	76.60	0.1352	49.9	0.0027
1, 35	520.20	76.40	0.1505	50.0	0.0030
1, 36	535.20	76.10	0.1399	49.9	0.0028
1, 37	550.20	75.90	0.1492	50.0	0.0030
1, 38	565.20	75.60	0.1406	49.9	0.0028
1, 39	580.20	75.40	0.1535	50.0	0.0031
1, 40	595.20	75.20	0.1498	50.0	0.0030
1, 41	610.20	74.90	0.1502	49.9	0.0030
1, 42	625.20	74.60	0.1435	50.0	0.0029
1, 43	640.20	74.40	0.1471	50.0	0.0029
1, 44	655.20	74.10	0.1496	49.9	0.0030
1, 45	670.20	73.90	0.1499	49.9	0.0030
1, 46	685.20	73.60	0.1576	50.0	0.0032
1, 47	700.20	73.40	0.1585	49.9	0.0032
1, 48	715.20	73.10	0.1634	49.9	0.0033
1, 49	730.20	72.90	0.1618	49.9	0.0032

1, 50	745.20	72.60	0.1677	50.0	0.0034
1, 51	760.20	72.40	0.1711	50.0	0.0034
1, 52	775.20	72.10	0.1802	50.0	0.0036
1, 53	790.20	71.90	0.1748	50.0	0.0035
1, 54	805.20	71.60	0.1907	49.9	0.0038
1, 55	820.20	71.40	0.1846	50.0	0.0037
1, 56	835.20	71.10	0.1813	50.0	0.0036
1, 57	850.20	70.90	0.1793	50.0	0.0036
1, 58	865.20	70.60	0.1819	50.0	0.0036
1, 59	880.20	70.40	0.1852	50.0	0.0037
1, 60	895.20	70.10	0.1878	50.0	0.0038
1, 61	910.20	69.90	0.1869	50.0	0.0037
1, 62	925.20	69.60	0.1931	49.9	0.0039
1, 63	940.20	69.40	0.1882	50.0	0.0038
1, 64	955.10	69.10	0.1921	49.9	0.0038
1, 65	970.10	68.90	0.1921	49.9	0.0038
1, 66	985.20	68.60	0.1885	50.0	0.0038
1, 67	1000.00	68.40	0.1994	50.0	0.0040
1, 68	1015.00	68.10	0.1894	50.0	0.0038
1, 69	1030.00	67.90	0.1903	49.9	0.0038
1, 70	1045.00	67.60	0.1932	50.0	0.0039
1, 71	1060.00	67.40	0.1935	50.0	0.0039
1, 72	1075.00	67.10	0.1965	50.0	0.0039
1, 73	1090.00	66.90	0.1925	50.1	0.0038
1, 74	1105.00	66.60	0.1954	49.9	0.0039
1, 75	1120.00	66.40	0.2021	49.9	0.0040
1, 76	1135.00	66.10	0.2069	49.9	0.0041
1, 77	1150.00	65.90	0.2029	50.1	0.0041
1, 78	1165.00	65.60	0.2018	49.9	0.0040
1, 79	1180.00	65.40	0.2072	49.9	0.0042
1, 80	1195.00	65.10	0.2052	50.0	0.0041
1, 81	1210.00	64.90	0.2086	49.9	0.0042
1, 82	1225.00	64.60	0.2160	50.0	0.0043
1, 83	1240.00	64.40	0.2126	49.9	0.0043
1, 84	1255.00	64.10	0.2212	49.9	0.0044
1, 85	1270.00	63.90	0.2207	50.0	0.0044
1, 86	1285.00	63.60	0.2248	50.0	0.0045
1, 87	1300.00	63.40	0.2361	49.9	0.0047
1, 88	1315.00	63.10	0.2359	49.9	0.0047
1, 89	1330.00	62.90	0.2419	50.0	0.0048
1, 90	1345.00	62.60	0.2474	49.9	0.0050
1, 91	1360.00	62.40	0.2511	49.9	0.0050
1, 92	1375.00	62.10	0.2573	50.0	0.0051
1, 93	1390.00	61.80	0.2640	49.9	0.0053

1, 94	1405.00	61.60	0.2671	50.1	0.0053
1, 95	1420.00	61.40	0.2751	49.9	0.0055
1, 96	1435.00	61.10	0.2806	49.9	0.0056
1, 97	1450.00	60.90	0.2867	50.0	0.0057
1, 98	1465.00	60.60	0.2866	49.9	0.0057
1, 99	1480.00	60.40	0.2958	50.1	0.0059
1, 100	1495.00	60.10	0.2975	49.9	0.0060
1, 101	1510.00	59.90	0.3041	49.9	0.0061
1, 102	1525.00	59.60	0.3075	49.9	0.0062
1, 103	1540.00	59.40	0.3126	49.9	0.0063
1, 104	1555.00	59.20	0.3168	50.0	0.0063
1, 105	1570.00	58.90	0.3232	49.9	0.0065
1, 106	1585.00	58.60	0.3275	50.0	0.0066
1, 107	1600.00	58.40	0.3317	49.9	0.0066
1, 108	1615.00	58.10	0.3367	49.9	0.0067
1, 109	1630.00	57.90	0.3411	49.9	0.0068
1, 110	1645.00	57.60	0.3487	49.9	0.0070
1, 111	1660.00	57.40	0.3511	49.9	0.0070
1, 112	1675.00	57.10	0.3552	49.9	0.0071
1, 113	1690.00	56.80	0.3626	50.1	0.0072
1, 114	1705.00	56.60	0.3633	49.9	0.0073
1, 115	1720.00	56.40	0.3683	49.9	0.0074
1, 116	1735.00	56.10	0.3725	49.9	0.0075
1, 117	1750.00	55.90	0.3776	50.0	0.0076
1, 118	1765.00	55.60	0.3816	49.9	0.0076
1, 119	1780.00	55.40	0.3846	50.1	0.0077
1, 120	1795.00	55.10	0.3896	49.9	0.0078
1, 121	1810.00	54.90	0.3943	49.9	0.0079
1, 122	1825.00	54.60	0.4012	50.2	0.0080
1, 123	1840.00	54.40	0.4026	49.9	0.0081
1, 124	1855.00	54.10	0.4070	49.9	0.0082
1, 125	1870.00	53.90	0.4109	49.9	0.0082
1, 126	1885.00	53.60	0.4145	49.9	0.0083
1, 127	1900.00	53.40	0.4195	49.9	0.0084
1, 128	1915.00	53.10	0.4240	49.9	0.0085
1, 129	1930.00	52.90	0.4282	50.0	0.0086
1, 130	1945.00	52.60	0.4330	49.9	0.0087
1, 131	1960.00	52.40	0.4373	49.9	0.0088
1, 132	1975.00	52.10	0.4403	50.1	0.0088
1, 133	1990.00	51.90	0.4446	49.9	0.0089
1, 134	2005.00	51.60	0.4496	49.9	0.0090
1, 135	2020.00	51.40	0.4555	50.2	0.0091
1, 136	2035.00	51.10	0.4587	49.9	0.0092
1, 137	2050.00	50.90	0.4631	50.0	0.0093

1, 138	2065.00	50.60	0.4675	49.9	0.0094
1, 139	2080.00	50.40	0.4711	50.0	0.0094
1, 140	2095.00	50.10	0.4762	49.9	0.0095
1, 141	2110.00	49.90	0.4808	49.9	0.0096
1, 142	2125.00	49.60	0.4850	50.0	0.0097
1, 143	2140.00	49.40	0.4903	49.9	0.0098
1, 144	2155.00	49.10	0.4946	49.9	0.0099
1, 145	2170.00	48.90	0.4987	50.0	0.0100
1, 146	2185.00	48.60	0.5051	49.9	0.0101
1, 147	2200.00	48.40	0.5135	50.0	0.0103
1, 148	2215.00	48.10	0.5141	49.9	0.0103
1, 149	2230.00	47.90	0.5195	49.9	0.0104
1, 150	2245.00	47.60	0.5245	49.9	0.0105
1, 151	2260.00	47.40	0.5334	50.1	0.0107
1, 152	2275.00	47.10	0.5351	49.9	0.0107
1, 153	2290.00	46.90	0.5393	49.9	0.0108
1, 154	2305.00	46.60	0.5435	49.9	0.0109
1, 155	2320.00	46.40	0.5456	49.9	0.0109
1, 156	2335.00	46.10	0.5521	50.0	0.0111
1, 157	2350.00	45.90	0.5565	49.9	0.0112
1, 158	2365.00	45.60	0.5576	49.9	0.0112
1, 159	2380.00	45.40	0.5683	49.9	0.0114
1, 160	2395.00	45.10	0.5697	50.2	0.0114
1, 161	2410.00	44.90	0.5749	50.0	0.0115
1, 162	2425.00	44.60	0.5831	49.9	0.0117
1, 163	2440.00	44.40	0.6003	50.1	0.0120
1, 164	2455.00	44.10	0.6023	49.9	0.0121
1, 165	2470.00	43.90	0.6083	49.9	0.0122
1, 166	2485.00	43.60	0.6176	50.2	0.0123
1, 167	2500.00	43.40	0.6210	49.9	0.0124
1, 168	2515.00	43.10	0.6270	49.9	0.0126
1, 169	2530.00	42.90	0.6342	49.9	0.0127
1, 170	2545.00	42.60	0.6409	49.9	0.0128
1, 171	2560.00	42.40	0.6472	49.9	0.0130
1, 172	2575.00	42.10	0.6558	49.9	0.0131
1, 173	2590.00	41.90	0.6615	49.9	0.0133
1, 174	2605.00	41.60	0.6725	50.2	0.0134
1, 175	2620.00	41.30	0.6763	49.9	0.0135
1, 176	2635.00	41.10	0.6849	49.9	0.0137
1, 177	2650.00	40.90	0.6988	50.1	0.0139
1, 178	2665.00	40.60	0.7016	49.9	0.0141
1, 179	2680.00	40.40	0.7108	49.9	0.0142
1, 180	2695.00	40.10	0.7188	49.9	0.0144
1, 181	2710.00	39.90	0.7292	49.9	0.0146

1, 182	2725.00	39.60	0.7388	50.0	0.0148
1, 183	2740.00	39.40	0.7514	49.9	0.0151
1, 184	2755.00	39.10	0.7637	50.0	0.0153
1, 185	2770.00	38.90	0.7855	50.1	0.0157
1, 186	2785.00	38.60	0.7939	49.9	0.0159
1, 187	2800.00	38.40	0.8107	49.9	0.0163
1, 188	2815.00	38.10	0.8306	50.1	0.0166
1, 189	2830.00	37.90	0.8553	50.2	0.0171
1, 190	2845.00	37.70	0.8801	50.0	0.0176
1, 191	2860.00	37.40	0.9095	49.9	0.0182
1, 192	2875.00	37.10	0.9490	49.8	0.0191
1, 193	2890.00	36.90	0.9887	50.1	0.0198
1, 194	2905.00	36.60	1.0390	50.0	0.0208
1, 195	2920.00	36.40	1.0920	49.9	0.0219
1, 196	2935.00	36.20	1.1570	50.0	0.0232
1, 197	2950.00	35.90	1.2320	50.1	0.0246
1, 198	2965.00	35.60	1.3170	49.9	0.0264
1, 199	2980.00	35.40	1.4280	50.4	0.0283
1, 200	2995.00	35.10	1.5350	49.7	0.0309
1, 201	3010.00	34.90	1.6800	50.0	0.0336
1, 202	3025.00	34.70	1.8450	50.0	0.0369
1, 203	3040.00	34.40	2.0450	49.9	0.0410
1, 204	3055.00	34.10	2.2960	50.0	0.0460
1, 205	3070.00	33.90	2.5710	49.8	0.0516
1, 206	3085.00	33.60	2.9460	50.1	0.0588
1, 207	3100.00	33.40	3.3490	49.6	0.0676
1, 208	3115.00	33.10	3.9300	50.2	0.0783
1, 209	3130.00	32.90	4.6120	50.1	0.0921
1, 210	3145.00	32.60	5.4170	49.9	0.1085
1, 211	3160.00	32.40	6.4470	50.2	0.1285
1, 212	3175.00	32.10	7.6870	49.8	0.1543
1, 213	3190.00	31.90	9.2260	49.9	0.1848
1, 214	3205.00	31.60	11.0000	49.9	0.2205
1, 215	3220.00	31.40	13.0000	50.0	0.2598
1, 216	3235.00	31.10	15.2200	50.0	0.3044
1, 217	3250.00	30.90	17.5800	50.0	0.3518
1, 218	3265.00	30.60	20.0300	50.1	0.4002
1, 219	3280.00	30.40	22.4600	50.0	0.4490
1, 220	3295.00	30.10	24.9200	49.9	0.4991

B3.5: Abu-attifel treated with 20% Sertica

	Time s	Temperature °C	Shear	Shear	Viscosity
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			Stress Pa	Rate 1/s	Pas
1, 1	10.25	85.00	0.1084	48.2	0.0023
1, 2	25.24	84.90	0.1036	49.8	0.0021
1, 3	40.23	84.60	0.1025	49.9	0.0021
1, 4	55.23	84.30	0.1028	49.9	0.0021
1, 5	70.23	84.00	0.1028	50.0	0.0021
1, 6	85.21	83.60	0.1034	50.0	0.0021
1, 7	100.20	83.40	0.1045	49.9	0.0021
1, 8	115.20	83.10	0.1047	49.9	0.0021
1, 9	130.20	82.90	0.1042	50.0	0.0021
1, 10	145.20	82.60	0.1047	50.0	0.0021
1, 11	160.20	82.40	0.1047	50.0	0.0021
1, 12	175.20	82.20	0.1057	50.0	0.0021
1, 13	190.20	81.90	0.1070	50.0	0.0021
1, 14	205.20	81.60	0.1069	50.0	0.0021
1, 15	220.20	81.40	0.1069	50.0	0.0021
1, 16	235.20	81.10	0.1075	50.0	0.0022
1, 17	250.20	80.90	0.1084	50.0	0.0022
1, 18	265.20	80.60	0.1087	50.0	0.0022
1, 19	280.20	80.40	0.1094	50.0	0.0022
1, 20	295.20	80.10	0.1102	50.0	0.0022
1, 21	310.20	79.90	0.1107	50.0	0.0022
1, 22	325.20	79.60	0.1110	50.0	0.0022
1, 23	340.20	79.40	0.1118	50.0	0.0022
1, 24	355.20	79.10	0.1121	50.0	0.0022
1, 25	370.20	78.90	0.1127	50.0	0.0023
1, 26	385.20	78.60	0.1140	50.0	0.0023
1, 27	400.20	78.40	0.1141	50.0	0.0023
1, 28	415.20	78.10	0.1143	49.9	0.0023
1, 29	430.20	77.90	0.1141	50.0	0.0023
1, 30	445.20	77.60	0.1152	50.0	0.0023
1, 31	460.20	77.40	0.1165	50.0	0.0023
1, 32	475.20	77.10	0.1171	50.0	0.0023
1, 33	490.20	76.90	0.1176	50.0	0.0024
1, 34	505.20	76.60	0.1179	50.0	0.0024
1, 35	520.20	76.40	0.1183	50.0	0.0024
1, 36	535.20	76.10	0.1188	50.0	0.0024
1, 37	550.20	75.90	0.1197	50.0	0.0024
1, 38	565.20	75.60	0.1210	50.0	0.0024
1, 39	580.20	75.40	0.1214	50.0	0.0024
1, 40	595.20	75.10	0.1216	50.1	0.0024
1, 41	610.20	74.90	0.1218	50.0	0.0024
1, 42	625.20	74.60	0.1068	57.3	0.0019
1, 43	640.20	74.40	0.1261	49.8	0.0025

1, 44	655.20	74.10	0.1243	50.0	0.0025
1, 45	670.20	73.90	0.1247	50.0	0.0025
1, 46	685.20	73.60	0.1254	50.0	0.0025
1, 47	700.20	73.40	0.1258	50.0	0.0025
1, 48	715.20	73.10	0.1265	50.0	0.0025
1, 49	730.20	72.90	0.1276	50.0	0.0026
1, 50	745.20	72.60	0.1282	50.0	0.0026
1, 51	760.20	72.40	0.1290	50.0	0.0026
1, 52	775.20	72.10	0.1299	50.0	0.0026
1, 53	790.20	71.90	0.1276	50.0	0.0026
1, 54	805.20	71.70	0.1266	50.0	0.0025
1, 55	820.20	71.30	0.1285	50.0	0.0026
1, 56	835.20	71.10	0.1262	50.0	0.0025
1, 57	850.20	70.90	0.1300	50.0	0.0026
1, 58	865.20	70.60	0.1217	49.9	0.0024
1, 59	880.20	70.40	0.1265	50.0	0.0025
1, 60	895.20	70.10	0.1280	50.0	0.0026
1, 61	910.20	69.90	0.1258	50.0	0.0025
1, 62	925.20	69.60	0.1291	50.0	0.0026
1, 63	940.20	69.40	0.1354	50.0	0.0027
1, 64	955.20	69.10	0.1353	50.0	0.0027
1, 65	970.20	68.90	0.1266	50.0	0.0025
1, 66	985.20	68.60	0.1270	49.9	0.0025
1, 67	1000.00	68.40	0.1344	49.9	0.0027
1, 68	1015.00	68.10	0.1371	50.0	0.0027
1, 69	1030.00	67.90	0.1352	49.9	0.0027
1, 70	1045.00	67.60	0.1365	49.9	0.0027
1, 71	1060.00	67.40	0.1380	49.9	0.0028
1, 72	1075.00	67.10	0.1426	49.9	0.0029
1, 73	1090.00	66.90	0.1419	50.0	0.0028
1, 74	1105.00	66.60	0.1405	49.9	0.0028
1, 75	1120.00	66.40	0.1455	49.9	0.0029
1, 76	1135.00	66.10	0.1429	50.0	0.0029
1, 77	1150.00	65.90	0.1409	49.9	0.0028
1, 78	1165.00	65.60	0.1589	49.9	0.0032
1, 79	1180.00	65.40	0.1543	49.9	0.0031
1, 80	1195.00	65.10	0.1589	50.0	0.0032
1, 81	1210.00	64.90	0.1624	49.9	0.0033
1, 82	1225.00	64.60	0.1732	49.9	0.0035
1, 83	1240.00	64.40	0.1748	49.9	0.0035
1, 84	1255.00	64.10	0.1842	49.9	0.0037
1, 85	1270.00	63.90	0.1913	50.0	0.0038
1, 86	1285.00	63.60	0.1974	49.9	0.0040
1, 87	1300.00	63.40	0.2065	50.0	0.0041

1, 88	1315.00	63.10	0.2031	50.0	0.0041
1, 89	1330.00	62.90	0.2227	50.1	0.0045
1, 90	1345.00	62.60	0.2330	49.9	0.0047
1, 91	1360.00	62.30	0.2415	50.0	0.0048
1, 92	1375.00	62.10	0.2437	50.0	0.0049
1, 93	1390.00	61.80	0.2582	50.0	0.0052
1, 94	1405.00	61.60	0.2672	50.1	0.0053
1, 95	1420.00	61.40	0.2771	50.1	0.0055
1, 96	1435.00	61.10	0.2927	50.0	0.0059
1, 97	1450.00	60.90	0.2993	49.9	0.0060
1, 98	1465.00	60.60	0.3098	50.0	0.0062
1, 99	1480.00	60.40	0.3281	50.1	0.0066
1, 100	1495.00	60.10	0.3277	49.8	0.0066
1, 101	1510.00	59.90	0.3511	49.9	0.0070
1, 102	1525.00	59.60	0.3653	49.9	0.0073
1, 103	1540.00	59.40	0.3839	49.9	0.0077
1, 104	1555.00	59.10	0.4005	49.9	0.0080
1, 105	1570.00	58.90	0.4110	49.9	0.0082
1, 106	1585.00	58.60	0.4242	49.9	0.0085
1, 107	1600.00	58.40	0.4475	50.1	0.0089
1, 108	1615.00	58.10	0.4599	49.9	0.0092
1, 109	1630.00	57.90	0.4793	50.0	0.0096
1, 110	1645.00	57.70	0.4909	50.1	0.0098
1, 111	1660.00	57.40	0.5110	49.9	0.0102
1, 112	1675.00	57.10	0.5265	49.9	0.0106
1, 113	1690.00	56.90	0.5270	49.9	0.0106
1, 114	1705.00	56.60	0.5432	49.9	0.0109
1, 115	1720.00	56.40	0.5620	50.1	0.0112
1, 116	1735.00	56.10	0.5678	49.9	0.0114
1, 117	1750.00	55.90	0.5801	49.9	0.0116
1, 118	1765.00	55.60	0.5949	49.9	0.0119
1, 119	1780.00	55.40	0.6087	50.0	0.0122
1, 120	1795.00	55.10	0.6268	49.9	0.0126
1, 121	1810.00	54.90	0.6299	49.9	0.0126
1, 122	1825.00	54.60	0.6425	49.9	0.0129
1, 123	1840.00	54.40	0.6561	49.9	0.0132
1, 124	1855.00	54.10	0.6621	49.9	0.0133
1, 125	1870.00	53.90	0.6825	50.1	0.0136
1, 126	1885.00	53.60	0.6937	49.9	0.0139
1, 127	1900.00	53.40	0.7088	50.2	0.0141
1, 128	1915.00	53.10	0.7068	49.9	0.0142
1, 129	1930.00	52.90	0.7144	50.0	0.0143
1, 130	1945.00	52.60	0.7323	49.9	0.0147
1, 131	1960.00	52.40	0.7371	49.9	0.0148

1, 132	1975.00	52.10	0.7500	50.1	0.0150
1, 133	1990.00	51.90	0.7594	49.9	0.0152
1, 134	2005.00	51.60	0.7707	50.2	0.0154
1, 135	2020.00	51.40	0.7817	49.9	0.0157
1, 136	2035.00	51.10	0.7968	49.9	0.0160
1, 137	2050.00	50.90	0.8049	49.9	0.0161
1, 138	2065.00	50.60	0.8176	49.9	0.0164
1, 139	2080.00	50.40	0.8302	49.9	0.0166
1, 140	2095.00	50.10	0.8428	50.1	0.0168
1, 141	2110.00	49.90	0.8531	49.9	0.0171
1, 142	2125.00	49.60	0.8713	50.2	0.0174
1, 143	2140.00	49.40	0.8773	49.9	0.0176
1, 144	2155.00	49.10	0.8920	50.2	0.0178
1, 145	2170.00	48.90	0.9019	49.9	0.0181
1, 146	2185.00	48.60	0.9156	50.2	0.0183
1, 147	2200.00	48.40	0.9266	49.9	0.0186
1, 148	2215.00	48.20	0.9452	50.1	0.0189
1, 149	2230.00	47.90	0.9519	49.9	0.0191
1, 150	2245.00	47.60	0.9721	50.1	0.0194
1, 151	2260.00	47.40	0.9781	49.9	0.0196
1, 152	2275.00	47.10	0.9927	49.9	0.0199
1, 153	2290.00	46.90	1.0040	49.9	0.0201
1, 154	2305.00	46.60	1.0170	49.9	0.0204
1, 155	2320.00	46.40	1.0290	49.9	0.0206
1, 156	2335.00	46.10	1.0440	49.9	0.0209
1, 157	2350.00	45.90	1.0580	49.9	0.0212
1, 158	2365.00	45.60	1.0730	49.9	0.0215
1, 159	2380.00	45.40	1.0880	49.9	0.0218
1, 160	2395.00	45.10	1.1020	49.9	0.0221
1, 161	2410.00	44.90	1.1160	49.9	0.0224
1, 162	2425.00	44.60	1.1300	49.9	0.0226
1, 163	2440.00	44.40	1.1440	49.9	0.0229
1, 164	2455.00	44.10	1.1600	49.9	0.0232
1, 165	2470.00	43.90	1.1750	49.9	0.0236
1, 166	2485.00	43.60	1.1910	49.9	0.0239
1, 167	2500.00	43.40	1.2060	50.0	0.0241
1, 168	2515.00	43.20	1.2230	49.9	0.0245
1, 169	2530.00	42.90	1.2380	49.9	0.0248
1, 170	2545.00	42.60	1.2550	49.9	0.0251
1, 171	2560.00	42.40	1.2730	49.9	0.0255
1, 172	2575.00	42.10	1.2910	49.9	0.0259
1, 173	2590.00	41.90	1.3070	49.9	0.0262
1, 174	2605.00	41.70	1.3260	49.9	0.0266
1, 175	2620.00	41.40	1.3460	49.9	0.0270

1, 176	2635.00	41.10	1.3640	49.9	0.0273
1, 177	2650.00	40.90	1.3840	49.9	0.0278
1, 178	2665.00	40.60	1.4050	49.9	0.0282
1, 179	2680.00	40.40	1.4230	49.9	0.0285
1, 180	2695.00	40.10	1.4540	50.0	0.0291