

Supporting Information for
**Impact of Hydrolysis Pretreatment on the Compostability of Biodegradable
Poly(caprolactone) and Poly(lactic acid) Films**

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Compost characterization

Table S1 depicts the values of the physicochemical parameters and nutrients measured for the compost used during the biodegradation test.

Table S1. Physicochemical parameters and total nutrient analysis measured in compost.

Parameter	Unit	Value
Nitrogen	%	2.46
Phosphorus	%	1.52
Potassium	%	3.03
Calcium	%	6.09
Magnesium	%	3.74
Sodium	%	0.60
Sulfur	%	0.49
Iron	ppm	11390
Zinc	ppm	508
Manganese	ppm	454
Copper	ppm	118
Boron	ppm	44
Aluminum	ppm	5198
Moisture	%	50.8
OM	%	44.6
Carbon	%	25.9
C/N ratio		10:1
pH		7.8
Total Dry Solids	%	49.2
Total Volatile Solids	%	44.6

Carbon content in samples

Table S2 shows the values of carbon content for all the materials evaluated in the biodegradation test.

Table S2. Carbon content of cellulose and tested samples.

Material	Carbon, %*
Cellulose	42.64 ± 0.03
PLA	49.93 ± 0.02
PBS	55.13 ± 0.60
PCL	62.85 ± 0.22
PBAT	60.42 ± 0.49
PHBV	54.87 ± 0.43
Cellophane	42.80 ± 0.15

* Percentage by weight.

Table S3. Viscosity-average molecular weight (M_η) for PLA_C and PLA-PT_C samples in compost.

Time, d	PLA_C			PLA-PT_C		
	IV, cm ³ /g	M_η , Da	$M_\eta/M_{\eta 0}$	IV, cm ³ /g	M_η , Da	$M_\eta/M_{\eta 0}$
0	149.62	166828	1.00	123.41	130210	1.00
6	130.05	139295	0.83	109.62	111800	0.86
12	90.64	87524	0.52	71.42	64404	0.49
18	61.79	53461	0.32	47.92	38544	0.30
30	33.36	24183	0.14	-	-	-

Table S4. Viscosity-average molecular weight (M_η) for PCL_C and PCL-PT_C samples in compost.

Time, d	PCL_C			PCL-PT_C		
	IV, cm ³ /g	M_η , Da	$M_\eta/M_{\eta 0}$	IV, cm ³ /g	M_η , Da	$M_\eta/M_{\eta 0}$
0	174.67	96972	1.00	169.61	93590	1.00
6	153.50	82962	0.86	153.24	82796	0.88
12	115.77	59012	0.61	116.42	59410	0.63
18	111.30	56266	0.58	105.19	52560	0.56

Table S5. Raw data for Blank.

Time, d	Average CO ₂ , g	Std. Error
0.00	0.0000	0
1.00	0.3271	0.010639263
2.00	0.7488	0.021610723
3.00	1.1488	0.027343001
4.00	1.5175	0.040498438
5.00	1.8687	0.065083434
6.00	2.2069	0.094052864
7.00	2.5365	0.12331674
8.00	2.8786	0.14936382
9.00	3.2265	0.170653041
10.00	3.5548	0.189136113
11.00	3.8397	0.204760697
12.00	4.0627	0.219057242
13.00	4.2453	0.23490699
14.00	4.4169	0.251419589
15.00	4.5825	0.266772491
16.00	4.7541	0.280023553
17.00	4.9403	0.288627266

18.00	5.1269	0.292769443
19.00	5.3022	0.293524167
20.00	5.4643	0.293147036
21.00	5.6188	0.295045272
22.00	5.7716	0.299913792
23.00	5.9326	0.306485604
24.00	6.0942	0.312183455
25.00	6.2379	0.314716192
26.00	6.3678	0.315688439
27.00	6.4947	0.318021736
28.00	6.6217	0.321489307
29.00	6.7540	0.320288504
30.00	6.8910	0.317265664
31.00	7.0249	0.316645508
32.00	7.1544	0.313904118
33.00	7.2830	0.310638345
34.00	7.4116	0.309812365
35.00	7.5369	0.309661256
36.00	7.6618	0.311632842
37.00	7.7883	0.315871293
38.00	7.9167	0.318734042
39.00	8.0474	0.321870042
40.00	8.1823	0.326822997
41.00	8.3212	0.332590756
42.00	8.4712	0.334777269
43.00	8.6270	0.334314724
44.00	8.7720	0.337841418
45.00	8.8989	0.334282744
46.00	9.0585	0.304794043
47.00	9.2756	0.257061155
48.00	9.4768	0.226551786
49.00	9.6263	0.216025385
50.00	9.7404	0.202846967
51.00	9.8482	0.187108582
52.00	9.9747	0.168572391
53.00	10.1030	0.148453102

54.00	10.2055	0.130248327
55.00	10.2929	0.112425647
56.00	10.3744	0.096114557
57.00	10.4487	0.082650113
58.00	10.5164	0.069136484
59.00	10.5838	0.05043655
60.00	10.6759	0.029595318
61.00	10.7797	0.031450415
62.00	10.8847	0.043421769
63.00	10.9845	0.050418514
64.00	11.0637	0.053842199
65.00	11.1426	0.065975938
66.00	11.2166	0.078653234
67.00	11.2765	0.089260652
68.00	11.3292	0.099332279
69.00	11.3854	0.109050485
70.00	11.4421	0.117583771
71.00	11.4913	0.12392768
72.00	11.5391	0.129165044
73.00	11.5903	0.133819615
74.00	11.6443	0.134476194
75.00	11.6940	0.135987306
76.00	11.7580	0.140335117
77.00	11.8256	0.145460429
78.00	11.8730	0.153734308
79.00	11.9205	0.163923584
80.00	11.9781	0.175977833
81.00	12.0347	0.187394593
82.00	12.0790	0.196117287
83.00	12.1215	0.204063009
84.00	12.1642	0.212146489
85.00	12.2081	0.215795281
86.00	12.2556	0.215089162
87.00	12.3091	0.216378262
88.00	12.3703	0.219886955
89.00	12.4268	0.222595638

90.00	12.4795	0.224077106
91.00	12.5296	0.2236286
92.00	12.5778	0.223725981
93.00	12.6259	0.226598145
94.00	12.6701	0.229865231
95.00	12.7125	0.231785084
96.00	12.7586	0.237166112
97.00	12.8105	0.245801839
98.00	12.8604	0.255946764
99.00	12.9062	0.265110224
100.00	12.9422	0.267844793
101.00	12.9827	0.272414428
102.00	13.0347	0.280284415
103.00	13.0786	0.28482843
104.00	13.1263	0.291406537
105.00	13.1771	0.298772979
106.00	13.2202	0.302206828
107.00	13.2607	0.304220858
108.00	13.3101	0.31019268
109.00	13.3648	0.319123739
110.00	13.4095	0.325557786
111.00	13.4539	0.331695742
112.00	13.4934	0.334260737
113.00	13.5332	0.336651243
114.00	13.5770	0.340352865
115.00	13.6205	0.34493068
116.00	13.6685	0.351869481
117.00	13.7113	0.356460106
118.00	13.7538	0.360299748
119.00	13.7990	0.364897799

Table S6. Raw data for Cellulose.

Time, d	Average CO₂, g	Std. Error	Mineralization, %	Std. Error
0.00	0.0000	0	0	0
1.00	0.6445	0.067982851	2.528335998	0.54168
2.00	1.6144	0.046046492	6.896660334	0.36689
3.00	2.5636	0.104364011	11.27303651	0.83155
4.00	3.4496	0.172721216	15.39425136	1.37621
5.00	4.2700	0.219310433	19.13349742	1.74743
6.00	5.0360	0.261965975	22.5416334	2.0873
7.00	5.7256	0.283141031	25.4105753	2.25602
8.00	6.3777	0.299507308	27.88024676	2.38642
9.00	7.0207	0.352857604	30.23171034	2.81151
10.00	7.6410	0.444115922	32.55841416	3.53864
11.00	8.2401	0.5499156	35.06157505	4.38163
12.00	8.7739	0.624112171	37.53761733	4.97282
13.00	9.2439	0.662980995	39.82832999	5.28252
14.00	9.7043	0.69626603	42.12888262	5.54773
15.00	10.1462	0.727988416	44.33092826	5.80049
16.00	10.5635	0.745578408	46.28858787	5.94064
17.00	10.9834	0.744214198	48.15063772	5.92977
18.00	11.4108	0.731859511	50.06857533	5.83133
19.00	11.8190	0.718886562	51.92502145	5.72797
20.00	12.2101	0.727587082	53.74978976	5.79729
21.00	12.5940	0.757402879	55.57732114	6.03486
22.00	12.9608	0.768000161	57.28180569	6.11929
23.00	13.3243	0.76229972	58.89623762	6.07387
24.00	13.7147	0.76897346	60.71887987	6.12705
25.00	14.1367	0.784681212	62.93621738	6.25221
26.00	14.5605	0.797129588	65.27773324	6.35139
27.00	14.9646	0.81533321	67.48694218	6.49644
28.00	15.3529	0.833801088	69.56869417	6.64359
29.00	15.7436	0.838233582	71.62802478	6.6789
30.00	16.1374	0.83886197	73.67327651	6.68391
31.00	16.5328	0.848600909	75.75777626	6.76151
32.00	16.9244	0.858334148	77.8451316	6.83906

33.00	17.3146	0.858910682	79.93020195	6.84365
34.00	17.6936	0.843786596	81.9254924	6.72315
35.00	18.0524	0.823246285	83.78541929	6.55949
36.00	18.4146	0.814851602	85.67696537	6.4926
37.00	18.7755	0.813194923	87.54383977	6.4794
38.00	19.1302	0.809317782	89.34750556	6.44851
39.00	19.4876	0.797219489	91.15326258	6.35211
40.00	19.8460	0.779434121	92.93433265	6.2104
41.00	20.2045	0.763432654	94.68432948	6.0829
42.00	20.5679	0.756393694	96.38510942	6.02682
43.00	20.9267	0.758438869	98.00211329	6.04311
44.00	21.2599	0.760788762	99.5019709	6.06184
45.00	21.5437	0.758371085	100.7517853	6.04257
46.00	21.7790	0.762783833	101.3548271	6.07773
47.00	22.0383	0.780997437	101.6917747	6.22286
48.00	22.3127	0.794146221	102.2749219	6.32762
49.00	22.5263	0.794798308	102.7849882	6.33282
50.00	22.7013	0.791624507	103.2706028	6.30753
51.00	22.8683	0.778345904	103.7416494	6.20173
52.00	23.0371	0.749550821	104.0791568	5.97229
53.00	23.2034	0.716036288	104.3817725	5.70526
54.00	23.3396	0.691324407	104.6504815	5.50836
55.00	23.4454	0.687968907	104.7968559	5.48162
56.00	23.5372	0.69340652	104.8783545	5.52495
57.00	23.6319	0.690095656	105.0419624	5.49857
58.00	23.7265	0.685795669	105.2563279	5.4643
59.00	23.8194	0.680675075	105.4592397	5.4235
60.00	23.9434	0.672555301	105.7131992	5.35881
61.00	24.0837	0.664997129	106.0036413	5.29858
62.00	24.2148	0.658843689	106.2122392	5.24955
63.00	24.3508	0.645283344	106.500483	5.14151
64.00	24.4639	0.616608462	106.770785	4.91303
65.00	24.5531	0.589051703	106.8527899	4.69346
66.00	24.6395	0.571718616	106.9513217	4.55536
67.00	24.7166	0.559547662	107.0882091	4.45838
68.00	24.7879	0.549045335	107.2366021	4.3747

69.00	24.8592	0.539275407	107.3571617	4.29685
70.00	24.9335	0.529082205	107.4977199	4.21564
71.00	25.0023	0.524030617	107.6530586	4.17539
72.00	25.0581	0.52167924	107.7174856	4.15665
73.00	25.1156	0.516696458	107.7674934	4.11695
74.00	25.1825	0.508858822	107.8701053	4.0545
75.00	25.2532	0.495999449	108.0373493	3.95204
76.00	25.3440	0.480862305	108.2508508	3.83143
77.00	25.4479	0.461159512	108.54028	3.67444
78.00	25.5298	0.442234878	108.8151107	3.52365
79.00	25.5923	0.431792981	108.9350608	3.44045
80.00	25.6551	0.423743756	108.9755977	3.37632
81.00	25.7270	0.413914885	109.0977921	3.298
82.00	25.7980	0.404498597	109.3104935	3.22298
83.00	25.8587	0.400203425	109.455746	3.18875
84.00	25.9137	0.397740615	109.5539926	3.16913
85.00	25.9830	0.39627364	109.7561073	3.15744
86.00	26.0776	0.391665843	110.1312463	3.12073
87.00	26.1801	0.380709151	110.5217307	3.03343
88.00	26.2791	0.368986352	110.8228644	2.94002
89.00	26.3755	0.357784869	111.1406034	2.85077
90.00	26.4761	0.346683271	111.5225758	2.76231
91.00	26.5804	0.33602257	111.9546616	2.67737
92.00	26.6775	0.322298967	112.3442389	2.56802
93.00	26.7668	0.308707851	112.6722481	2.45973
94.00	26.8572	0.300212654	113.0401266	2.39204
95.00	26.9543	0.297487338	113.4757152	2.37033
96.00	27.0579	0.302566734	113.9341484	2.4108
97.00	27.1579	0.314312941	114.3178474	2.50439
98.00	27.2556	0.32769636	114.6981771	2.61103
99.00	27.3440	0.333036446	115.0374427	2.65358
100.00	27.4200	0.331355663	115.3564344	2.64019
101.00	27.4953	0.331550699	115.6338986	2.64174
102.00	27.5684	0.332967592	115.802431	2.65303
103.00	27.6395	0.334230813	116.018834	2.66309
104.00	27.7084	0.334714184	116.1878513	2.66695

105.00	27.7768	0.335825335	116.3277112	2.6758
106.00	27.8462	0.338519967	116.53724	2.69727
107.00	27.9152	0.339230168	116.7645101	2.70293
108.00	27.9813	0.336766401	116.8982398	2.6833
109.00	28.0444	0.333853415	116.9642338	2.66009
110.00	28.1084	0.332520888	117.1181445	2.64947
111.00	28.1788	0.333606906	117.3260544	2.65812
112.00	28.2496	0.334195614	117.5749519	2.66281
113.00	28.3163	0.333287993	117.7898087	2.65558
114.00	28.3822	0.333074345	117.965271	2.65388
115.00	28.4472	0.334111884	118.1367967	2.66215
116.00	28.5130	0.334346588	118.2780884	2.66402
117.00	28.5820	0.33174959	118.4870256	2.64332
118.00	28.6537	0.328011246	118.720078	2.61354
119.00	28.7218	0.327573064	118.9022656	2.61005

Table S7. Raw data for PLA.

Time, d	Average CO ₂ , g	Std. Error CO ₂	Mineralization, %	Std. Error Min
0.00	0.0000	0	0	0
1.00	0.2745	0.058134646	-0.357368619	0.394999884
2.00	0.7152	0.151931371	-0.228486622	1.032308232
3.00	1.2124	0.246277927	0.432103185	1.67335245
4.00	1.6719	0.307777466	1.048826907	2.09121533
5.00	2.0365	0.337633674	1.140501416	2.294075406
6.00	2.3498	0.363974655	0.970820998	2.473051029
7.00	2.6498	0.391687322	0.770148248	2.661346668
8.00	2.9474	0.415368082	0.467403824	2.822247228
9.00	3.2454	0.440923437	0.128098683	2.995884865
10.00	3.5437	0.472806523	-0.075300917	3.212516698
11.00	3.8220	0.502556475	-0.120332368	3.41465481
12.00	4.0678	0.532479343	0.034647083	3.617967812
13.00	4.2940	0.570142349	0.330978237	3.873871721
14.00	4.5125	0.611638476	0.649649814	4.155820027
15.00	4.7318	0.652585239	1.014750888	4.434035654
16.00	4.9581	0.687786207	1.386457926	4.673211071
17.00	5.1958	0.718615657	1.73634938	4.882683905

18.00	5.4443	0.750776413	2.156429261	5.101202391
19.00	5.6836	0.780924627	2.591666204	5.306046523
20.00	5.9040	0.810024676	2.988182633	5.503768823
21.00	6.1244	0.846987051	3.435436689	5.75491224
22.00	6.3473	0.886842612	3.911410584	6.025713615
23.00	6.5665	0.919445372	4.307528311	6.247235324
24.00	6.7962	0.950573221	4.769547889	6.458735657
25.00	7.0412	0.990159887	5.457828069	6.727710004
26.00	7.3010	1.037300592	6.34032631	7.048010792
27.00	7.5809	1.085215035	7.380183693	7.373568797
28.00	7.8861	1.132249265	8.591075097	7.693146132
29.00	8.2379	1.188386709	10.08271074	8.074575889
30.00	8.6578	1.264252209	12.00418361	8.590049289
31.00	9.1547	1.361705402	14.47125284	9.252201764
32.00	9.7382	1.474177966	17.55585044	10.01640439
33.00	10.3604	1.564487955	20.90993026	10.63002188
34.00	10.9530	1.612012287	24.0623289	10.95292925
35.00	11.5286	1.645373735	27.12152062	11.17960592
36.00	12.1142	1.67951567	30.25206962	11.41158566
37.00	12.7059	1.705354258	33.41334531	11.58714774
38.00	13.3039	1.704306273	36.60326591	11.58002713
39.00	13.9145	1.671206254	39.86415276	11.35512676
40.00	14.5405	1.617794522	43.20118507	10.99221704
41.00	15.1786	1.558202634	46.59340295	10.58731583
42.00	15.8450	1.503989411	50.1023272	10.21896033
43.00	16.5269	1.436899016	53.67682338	9.763109985
44.00	17.1750	1.353808502	57.09513007	9.198545725
45.00	17.7444	1.274959506	60.10169244	8.662800757
46.00	18.2728	1.191273995	62.607271	8.094193753
47.00	18.8526	1.103999058	65.0717088	7.501198138
48.00	19.4446	0.990010506	67.72713849	6.726695023
49.00	19.9317	0.867210167	70.02065762	5.892319607
50.00	20.2869	0.80531833	71.65888502	5.471791227
51.00	20.5903	0.78551254	72.98806625	5.337219413
52.00	20.9171	0.761710967	74.34923226	5.175497975
53.00	21.2590	0.723040689	75.80028964	4.912750088

54.00	21.5596	0.682969098	77.14606663	4.640480884
55.00	21.8085	0.657781608	78.2436611	4.469342737
56.00	22.0242	0.652123992	79.15493602	4.430901679
57.00	22.2230	0.65406288	80.00149483	4.444075582
58.00	22.4107	0.650686674	80.81684942	4.42113572
59.00	22.6007	0.629387479	81.65006395	4.276416861
60.00	22.8324	0.589915979	82.59830991	4.008225017
61.00	23.0949	0.551050263	83.67663443	3.74414922
62.00	23.3689	0.527542352	84.82515435	3.584423086
63.00	23.6344	0.515694391	85.95048713	3.50392129
64.00	23.8575	0.505172566	86.92852874	3.432430021
65.00	24.0658	0.497982074	87.80778196	3.38357373
66.00	24.2669	0.497714753	88.67107323	3.381757395
67.00	24.4408	0.502859674	89.44554619	3.41671492
68.00	24.5991	0.503915406	90.16314709	3.423888163
69.00	24.7600	0.498754518	90.87498157	3.388822154
70.00	24.9189	0.491639245	91.56961854	3.340476933
71.00	25.0543	0.485843153	92.15430318	3.301094989
72.00	25.1769	0.482226554	92.66303239	3.276521751
73.00	25.3122	0.47845389	93.23423716	3.250888129
74.00	25.4497	0.475196507	93.80201773	3.228755613
75.00	25.5770	0.471309317	94.32900913	3.20234383
76.00	25.7330	0.463632954	94.95419729	3.150186248
77.00	25.9020	0.453974751	95.64328289	3.084562921
78.00	26.0275	0.446776291	96.17398285	3.035652483
79.00	26.1237	0.44483466	96.50467471	3.022459935
80.00	26.2223	0.447859745	96.78309591	3.04301409
81.00	26.3339	0.445421891	97.15710403	3.026449922
82.00	26.4675	0.444340466	97.76359536	3.019102105
83.00	26.6291	0.461032915	98.57277135	3.132520102
84.00	26.7777	0.478505754	99.29262856	3.251240522
85.00	26.8956	0.485627664	99.79533911	3.299630835
86.00	27.0065	0.485471425	100.2259563	3.298569255
87.00	27.1171	0.484430086	100.6141792	3.291493803
88.00	27.2302	0.486708799	100.9667396	3.306976676
89.00	27.3450	0.489333414	101.362567	3.324809808

90.00	27.4598	0.493190349	101.7843925	3.351016022
91.00	27.5737	0.494377378	102.2184063	3.359081368
92.00	27.6726	0.502521955	102.5630637	3.414420266
93.00	27.7430	0.519911844	102.7147161	3.53257707
94.00	27.8133	0.530257662	102.8910848	3.602872447
95.00	27.8836	0.534735864	103.0809526	3.633299899
96.00	27.9465	0.549155493	103.1949067	3.731275071
97.00	28.0269	0.562844519	103.3891692	3.824286104
98.00	28.1198	0.566543277	103.6812744	3.849417576
99.00	28.2121	0.572446747	103.996456	3.88952911
100.00	28.2774	0.576716986	104.1958381	3.918543546
101.00	28.3400	0.582936929	104.3460161	3.960805381
102.00	28.4305	0.595205633	104.6081157	4.044165937
103.00	28.5211	0.609266142	104.9253915	4.139701045
104.00	28.6077	0.619763353	105.1894536	4.211025068
105.00	28.6885	0.63568599	105.3933708	4.319212531
106.00	28.7519	0.658862063	105.5307359	4.476683964
107.00	28.8058	0.678721589	105.6222391	4.61162089
108.00	28.8716	0.685452191	105.7336733	4.657352435
109.00	28.9455	0.679354432	105.8637653	4.615920786
110.00	29.0155	0.67797655	106.0358003	4.606558674
111.00	29.0863	0.67864701	106.2158167	4.61111416
112.00	29.1444	0.6771047	106.3417131	4.600634826
113.00	29.1978	0.671311681	106.434114	4.56127376
114.00	29.2543	0.670541471	106.5205682	4.556040513
115.00	29.3141	0.66750659	106.6314414	4.535419808
116.00	29.3824	0.651796824	106.7692044	4.428678712
117.00	29.4554	0.630681115	106.9742556	4.28520656
118.00	29.5284	0.606768023	107.18189	4.122727399
119.00	29.5928	0.593858374	107.3123059	4.035011895

Table S8. Raw data for PLA-PT.

Time, d	Average CO₂, g	Std. Error	Mineralization, %	Std. Error
0.00	0.0000	0	0	0
1.00	0.3266	0.047692592	-0.003406224	0.457695413
2.00	0.8639	0.129131919	0.781027528	1.231737268
3.00	1.4493	0.211454058	2.040095815	1.987488849
4.00	1.9868	0.270924905	3.185483616	2.504532934
5.00	2.4417	0.31362405	3.889516556	2.851118767
6.00	2.8150	0.338539465	4.127867374	3.019208955
7.00	3.1070	0.336797641	3.872861637	2.92287851
8.00	3.3548	0.321439229	3.231951601	2.672159356
9.00	3.5936	0.307862858	2.491769662	2.422724961
10.00	3.8316	0.300616831	1.879201839	2.223061299
11.00	4.0449	0.294871466	1.392945862	1.98322903
12.00	4.2318	0.286074319	1.147877388	1.746547247
13.00	4.4242	0.280171245	1.214273267	1.603916398
14.00	4.6538	0.2892929	1.607914381	1.590836818
15.00	4.8941	0.301966933	2.115414902	1.625574745
16.00	5.1187	0.310787912	2.474905417	1.610748127
17.00	5.3701	0.329198147	2.917677341	1.633187058
18.00	5.6537	0.360143731	3.575549982	1.661010258
19.00	5.9238	0.393934955	4.219162797	1.489663854
20.00	6.1776	0.42633322	4.841813242	1.236244975
21.00	6.4713	0.460836064	5.786170499	1.223000779
22.00	6.8227	0.504584692	7.134588161	1.383830995
23.00	7.2059	0.559623612	8.642973566	1.541599731
24.00	7.6139	0.629632972	10.31514837	1.713876092
25.00	8.0515	0.717157756	12.30974302	1.870798707
26.00	8.5130	0.822115775	14.5609281	1.903036275
27.00	8.9863	0.936527099	16.91207574	1.852271732
28.00	9.4831	1.051908073	19.42214989	1.847579149
29.00	9.9981	1.161074769	22.02028396	1.879443465
30.00	10.5168	1.26056451	24.6107728	1.928143662
31.00	11.0389	1.353005598	27.24600933	2.016495808
32.00	11.5980	1.447806152	30.16128524	2.268209038
33.00	12.2462	1.56111522	33.68888036	2.794348183

34.00	12.9289	1.674041473	37.44977814	3.409652795
35.00	13.5815	1.765876879	41.02841006	3.89431144
36.00	14.2388	1.855161425	44.64267251	4.347187266
37.00	14.9184	1.947330248	48.396737	4.917934623
38.00	15.5673	2.032061941	51.92956758	5.402290836
39.00	16.1897	2.114821125	55.26702995	5.747135316
40.00	16.8314	2.20722301	58.70755447	6.172176681
41.00	17.5033	2.305866714	62.32480053	6.733527222
42.00	18.2254	2.369414252	66.2085125	7.266432856
43.00	18.9590	2.364763496	70.13018008	7.703631404
44.00	19.6562	2.338262394	73.87834868	8.244186812
45.00	20.2308	2.330535711	76.91731431	8.704104914
46.00	20.6813	2.341939287	78.89143337	8.928579068
47.00	21.1796	2.379043021	80.80075911	9.227515303
48.00	21.7782	2.454893869	83.49817024	9.787148884
49.00	22.3812	2.56018023	86.5760544	10.39124296
50.00	22.8728	2.649097958	89.13845082	10.69476983
51.00	23.2949	2.722218685	91.27172386	10.82545256
52.00	23.7360	2.797440591	93.4075687	10.99565658
53.00	24.1695	2.86483012	95.47867094	11.19432849
54.00	24.5266	2.913533299	97.20744076	11.33080391
55.00	24.7929	2.939318023	98.42176588	11.33070144
56.00	25.0046	2.94794441	99.30505024	11.2818872
57.00	25.1899	2.948930442	100.0585427	11.26553776
58.00	25.3575	2.946206512	100.7364477	11.23187067
59.00	25.5648	2.956865168	101.6866001	11.23916152
60.00	25.8702	2.998298864	103.1341863	11.26030088
61.00	26.2200	3.008167227	104.8037697	11.16221535
62.00	26.5474	2.983279015	106.3133723	10.93696584
63.00	26.8570	2.98919677	107.7373513	10.97599214
64.00	27.1690	3.001274936	109.3180998	11.58691467
65.00	27.4586	3.008902621	110.7477879	11.73057983
66.00	27.6925	3.022123181	111.8329081	11.32318261
67.00	27.8881	3.033049501	112.7538018	10.83521055
68.00	28.0818	3.03770562	113.711122	10.2704588
69.00	28.2626	3.036090512	114.557089	10.08010119

70.00	28.4289	3.03225787	115.3015467	10.0872933
71.00	28.6019	3.024971767	116.1410313	10.15207688
72.00	28.7812	3.020704309	117.033648	10.24327867
73.00	28.9724	3.024052225	117.9843269	10.36291234
74.00	29.1679	3.032014585	118.9448385	10.52342472
75.00	29.3532	3.044799978	119.8647534	10.68860976
76.00	29.5641	3.061120093	120.8623621	10.89701815
77.00	29.7834	3.075230799	121.8917677	11.12119721
78.00	29.9478	3.08725351	122.6858698	11.29028037
79.00	30.0806	3.102444916	123.2651287	11.41990867
80.00	30.2247	3.114687922	123.8517921	11.58349419
81.00	30.3589	3.116430152	124.3789459	11.71019152
82.00	30.4723	3.11095573	124.8478312	11.74820271
83.00	30.5890	3.098323627	125.3509349	11.76902922
84.00	30.6958	3.079179395	125.7863627	11.8036141
85.00	30.7937	3.061111155	126.1530901	11.87313044
86.00	30.8876	3.045583901	126.4677573	11.97580527
87.00	30.9675	3.032190906	126.6470499	12.08292468
88.00	31.0541	3.023627209	126.8193648	12.13876143
89.00	31.1679	3.018668518	127.2084633	12.15045584
90.00	31.2900	3.017134179	127.6792294	12.16032202
91.00	31.3978	3.017496529	128.0712674	12.18012759
92.00	31.4940	3.025817123	128.3969647	12.19089386
93.00	31.6023	3.050072872	128.8058933	12.31212289
94.00	31.7311	3.083353914	129.3795834	12.59782084
95.00	31.8433	3.112568602	129.853406	12.86333287
96.00	31.9473	3.139159634	130.2468233	13.12192447
97.00	32.0727	3.17281951	130.7458231	13.33201686
98.00	32.1982	3.208144368	131.2586855	13.39921409
99.00	32.3009	3.237233445	131.6443133	13.43035288
100.00	32.3656	3.252327515	131.839688	13.46126719
101.00	32.3925	3.25553157	131.7471495	13.44578909
102.00	32.3994	3.256112813	131.4412793	13.41394494
103.00	32.4079	3.253449054	131.2015749	13.39425692
104.00	32.4403	3.255705604	131.0976707	13.44091704
105.00	32.5278	3.277364978	131.3463945	13.66734648

106.00	32.6675	3.314778505	132.0014584	14.0440691
107.00	32.8395	3.361640919	132.8947553	14.51240957
108.00	33.0435	3.412128623	133.9442066	15.07250339
109.00	33.3000	3.475993614	135.3131777	15.77963941
110.00	33.5776	3.552024235	136.8943493	16.54571624
111.00	33.7751	3.607652206	137.9342509	17.01094445
112.00	33.8682	3.62959391	138.297851	17.12484844
113.00	33.9195	3.63840728	138.375643	17.13325875
114.00	34.0018	3.660371731	138.6368951	17.27460874
115.00	34.0994	3.687985768	139.0044021	17.43345241
116.00	34.1482	3.701707615	139.0097204	17.44934826
117.00	34.1569	3.70406983	138.7778233	17.36675193
118.00	34.1613	3.705272163	138.519941	17.27412697
119.00	34.1771	3.709479843	138.3200313	25.17874467

Table S9. Raw data for PCL.

Time, d	Average CO ₂ , g	Std. Error	Mineralization, %	Std. Error
0.00	0.0000	0	0	0
1.00	0.4403	0.018824552	0.609377516	0.101365075
2.00	1.1988	0.030576678	2.422767441	0.164647065
3.00	2.0937	0.090972626	5.088393543	0.489862754
4.00	3.1008	0.200810975	8.525766666	1.081312276
5.00	4.2094	0.338597511	12.60401061	1.823255153
6.00	5.3264	0.496045082	16.79760879	2.671067336
7.00	6.3570	0.635088149	20.57239345	3.419776288
8.00	7.3186	0.738339813	23.90813064	3.97575831
9.00	8.1912	0.81422335	26.73373657	4.384370441
10.00	8.9785	0.858403913	29.20557414	4.622270709
11.00	9.7528	0.866455218	31.84082377	4.665624784
12.00	10.4379	0.856360227	34.32862743	4.611266017
13.00	10.9669	0.833553408	36.19434423	4.488457523
14.00	11.4400	0.805539024	37.81771698	4.337607714
15.00	11.8826	0.777968266	39.30911626	4.189146707
16.00	12.2822	0.754037667	40.53688559	4.060286969
17.00	12.6495	0.729367065	41.51183056	3.92744251
18.00	13.0340	0.715174201	42.57733761	3.851017812

19.00	13.4345	0.708665773	43.79032224	3.815971703
20.00	13.7984	0.697334835	44.87732764	3.754957698
21.00	14.1409	0.682311894	45.88891222	3.674063264
22.00	14.5126	0.675802647	47.06779653	3.639012745
23.00	14.9130	0.680163641	48.35705946	3.662495506
24.00	15.3149	0.686138917	49.65081197	3.694670734
25.00	15.6959	0.701035874	50.92861413	3.774886781
26.00	16.0570	0.723102018	52.17335678	3.893706942
27.00	16.4214	0.737798636	53.45274729	3.972844221
28.00	16.7957	0.722338915	54.78446137	3.889597843
29.00	17.1786	0.692591511	56.13358965	3.729416193
30.00	17.5569	0.673220199	57.4326439	3.625106965
31.00	17.9224	0.654980565	58.68042467	3.52689152
32.00	18.2863	0.640060594	59.94207976	3.446551548
33.00	18.6526	0.638428924	61.22244264	3.437765452
34.00	19.0335	0.657950408	62.58061311	3.54288331
35.00	19.4245	0.685792409	64.01126343	3.692804884
36.00	19.7966	0.683132438	65.34278467	3.678481665
37.00	20.1362	0.657283221	66.49017503	3.539290692
38.00	20.4443	0.642214201	67.45787578	3.458148134
39.00	20.7340	0.639138464	68.31386597	3.441586127
40.00	21.0057	0.643602901	69.05063021	3.465625902
41.00	21.2612	0.652950476	69.67827192	3.515960041
42.00	21.5292	0.662971957	70.31412983	3.569922982
43.00	21.8181	0.678379935	71.03052366	3.652890738
44.00	22.1050	0.702336862	71.79464048	3.781892249
45.00	22.3769	0.731027621	72.57553227	3.93638415
46.00	22.6658	0.755009233	73.27128706	4.065518586
47.00	23.0244	0.765189977	74.03377463	4.12033911
48.00	23.3917	0.771898739	74.92823097	4.156463962
49.00	23.6864	0.785537183	75.7097626	4.22990326
50.00	23.9410	0.803977359	76.46642106	4.329198576
51.00	24.1976	0.823850099	77.26750112	4.436207853
52.00	24.4730	0.844004089	78.06936364	4.544731588
53.00	24.7358	0.858672664	78.79338264	4.623717861
54.00	24.9263	0.863218207	79.26745194	4.648194364

55.00	25.0688	0.876476804	79.56443704	4.719588292
56.00	25.2300	0.914358805	79.99283502	4.923572523
57.00	25.4196	0.957634271	80.61420589	5.156599094
58.00	25.6076	0.993012521	81.26204098	5.347101313
59.00	25.7893	1.019093967	81.87773769	5.487542773
60.00	26.0368	1.035747158	82.71439923	5.577215665
61.00	26.3386	1.050369541	83.7803363	5.655953202
62.00	26.5940	1.067530288	84.59026952	5.748359139
63.00	26.8008	1.080434867	85.16659471	5.817846775
64.00	26.9672	1.075220341	85.63648353	5.789767975
65.00	27.1034	1.071731269	85.94472357	5.770980278
66.00	27.2400	1.085032219	86.28184841	5.842602258
67.00	27.3790	1.094830654	86.70758876	5.895364156
68.00	27.5136	1.096936297	87.14831138	5.906702468
69.00	27.6364	1.095064932	87.50728825	5.896625679
70.00	27.7525	1.089672257	87.82748058	5.867587596
71.00	27.8584	1.086384792	88.13229848	5.849885499
72.00	27.9551	1.08284502	88.39574361	5.83082479
73.00	28.0631	1.080054128	88.70168058	5.815796601
74.00	28.1795	1.080579005	89.03782555	5.818622917
75.00	28.3182	1.07662852	89.51695738	5.797350637
76.00	28.5153	1.065625154	90.23363386	5.738100514
77.00	28.7342	1.052988691	91.04823161	5.670056612
78.00	28.9078	1.045605236	91.72803659	5.630298721
79.00	29.0370	1.048433925	92.16792277	5.645530442
80.00	29.1454	1.055576264	92.44133848	5.683989985
81.00	29.2468	1.062086811	92.68280844	5.719047503
82.00	29.3677	1.066937099	93.09486427	5.745164981
83.00	29.5002	1.069472488	93.57918951	5.75881736
84.00	29.6116	1.069891178	93.94980208	5.761071887
85.00	29.7052	1.068840221	94.21741642	5.755412772
86.00	29.7887	1.072071819	94.41114289	5.772814047
87.00	29.8722	1.084054188	94.57238509	5.837335832
88.00	29.9692	1.094567345	94.76497881	5.893946311
89.00	30.0696	1.096797825	95.00137042	5.905956837
90.00	30.1690	1.099820345	95.25290001	5.92223228

91.00	30.2689	1.108253131	95.52106785	5.96764053
92.00	30.3542	1.10810486	95.72120034	5.966842131
93.00	30.4386	1.101276689	95.91663627	5.930074294
94.00	30.5441	1.109458421	96.24626747	5.97413069
95.00	30.6539	1.1269707	96.60949364	6.068429532
96.00	30.7573	1.13995577	96.91809462	6.13835059
97.00	30.8556	1.147908241	97.16780794	6.181172472
98.00	30.9516	1.152974318	97.41585821	6.208451912
99.00	31.0298	1.1571171	97.59042205	6.230759663
100.00	31.0781	1.159772622	97.65658161	6.245058926
101.00	31.1128	1.160075109	97.62569045	6.246687732
102.00	31.1441	1.158730469	97.51432213	6.239447213
103.00	31.1720	1.15600144	97.42819577	6.224752138
104.00	31.1989	1.149795408	97.31625504	6.191334349
105.00	31.2518	1.15376317	97.32742371	6.212699669
106.00	31.3591	1.188386837	97.67281218	6.399138658
107.00	31.4679	1.225111003	98.04092013	6.596888269
108.00	31.5448	1.236345983	98.18922499	6.657385567
109.00	31.6188	1.238202353	98.29279803	6.667381614
110.00	31.6967	1.238420308	98.4714479	6.66855524
111.00	31.7833	1.239849366	98.69887387	6.676250327
112.00	31.8588	1.243636386	98.89295226	6.696642397
113.00	31.9309	1.258306142	99.06660966	6.77563503
114.00	31.9990	1.274042839	99.19728793	6.860372847
115.00	32.0506	1.27150623	99.24097187	6.846713899
116.00	32.0910	1.262686192	99.1998749	6.7992204
117.00	32.1105	1.254297816	99.07431936	6.754051286
118.00	32.1369	1.245283104	98.988022	6.705509524
119.00	32.1838	1.235666797	98.99713365	6.653728335

Table S10. Raw data for PCL-PT.

Time, d	Average CO ₂ , g	Std. Error	Mineralization, %	Std. Error
0.00	0.0000	0	0	0
1.00	0.2689	0.089850551	-0.315277871	0.486026074
2.00	0.7701	0.18448837	0.114836174	0.997947785
3.00	1.3761	0.242017527	1.229918641	1.309138647

4.00	2.0412	0.335905113	2.832770609	1.817002147
5.00	2.7667	0.509289917	4.857747386	2.754887722
6.00	3.5019	0.736402772	7.004783732	3.983402944
7.00	4.2424	0.937779858	9.227915856	5.072706387
8.00	5.0148	1.127391978	11.55515808	6.098369931
9.00	5.7414	1.319587364	13.60364631	7.138007066
10.00	6.4084	1.511897854	15.4358647	8.178266828
11.00	7.0519	1.710567893	17.37584284	9.252927118
12.00	7.6186	1.897840019	19.23456205	10.265933
13.00	8.0644	2.056282765	20.65890223	11.12299292
14.00	8.4671	2.181173028	21.90866805	11.79855833
15.00	8.8414	2.292441292	23.03800541	12.40043864
16.00	9.2074	2.3925825	24.0893142	12.94212968
17.00	9.6771	2.433781279	25.62258576	13.16498508
18.00	10.2469	2.415915353	27.69566246	13.06834343
19.00	10.7770	2.395576644	29.61453277	12.95832582
20.00	11.2677	2.384879091	31.39228502	12.90045985
21.00	11.7430	2.3876938	33.12744843	12.91568537
22.00	12.2456	2.37747383	35.01943598	12.86040278
23.00	12.7701	2.359788193	36.98581917	12.76473635
24.00	13.2780	2.357043696	38.85921722	12.74989062
25.00	13.8216	2.347935729	41.02189665	12.70062315
26.00	14.3792	2.333294991	43.33566208	12.62142741
27.00	14.9391	2.321012159	45.67823081	12.55498624
28.00	15.5450	2.303527465	48.26858847	12.46040677
29.00	16.1763	2.277377898	50.96775767	12.31895665
30.00	16.7618	2.253936127	53.39352467	12.19215373
31.00	17.3327	2.238911221	55.75813381	12.11087992
32.00	17.9443	2.20783614	58.3654531	11.94278636
33.00	18.5616	2.144082381	61.00946012	11.59792493
34.00	19.1651	2.064406997	63.57769199	11.1669391
35.00	19.7367	1.991355887	65.99170737	10.77178577
36.00	20.2573	1.941817267	68.13258105	10.5038179
37.00	20.7176	1.917214559	69.93808027	10.37073516
38.00	21.1147	1.905268829	71.391542	10.30611745
39.00	21.4768	1.896236349	72.64311512	10.25725831

40.00	21.8161	1.886828021	73.74880274	10.20636611
41.00	22.1454	1.876692964	74.77901641	10.15154282
42.00	22.4958	1.87219421	75.86320442	10.12720784
43.00	22.8808	1.874701165	77.10283865	10.14076864
44.00	23.2451	1.87571534	78.28924054	10.14625459
45.00	23.5644	1.871312015	79.32952229	10.12243581
46.00	23.8722	1.864720255	80.13111694	10.08677918
47.00	24.2061	1.866234082	80.76351023	10.09496789
48.00	24.5285	1.867706968	81.41892809	10.10293513
49.00	24.7775	1.855699701	81.95685277	10.03798456
50.00	24.9874	1.839377875	82.47533243	9.949695354
51.00	25.1907	1.821869609	82.99185997	9.854988382
52.00	25.4127	1.804821606	83.50851209	9.762771097
53.00	25.6696	1.799130617	84.20399027	9.731986988
54.00	25.9077	1.800661489	84.93771309	9.740267893
55.00	26.0965	1.798573506	85.4859129	9.728973424
56.00	26.3006	1.806538321	86.14879605	9.772057275
57.00	26.5975	1.852934342	87.35318341	10.02302597
58.00	26.9566	1.941507574	88.92971293	10.50214268
59.00	27.3206	2.043717036	90.53408063	11.05502147
60.00	27.6742	2.132189921	91.94876718	11.53359537
61.00	27.9700	2.196081295	92.98683247	11.8792012
62.00	28.2065	2.244108812	93.69827521	12.13899511
63.00	28.4258	2.284672916	94.34452292	12.35841738
64.00	28.5907	2.296358089	94.80860618	12.42162566
65.00	28.7053	2.287035033	95.0015701	12.37119472
66.00	28.8349	2.293830952	95.30242633	12.40795569
67.00	28.9781	2.314217564	95.75248293	12.51823242
68.00	29.0935	2.325127603	96.09199733	12.57724779
69.00	29.1996	2.334307717	96.36179583	12.62690553
70.00	29.3155	2.350281587	96.68221942	12.71331253
71.00	29.4226	2.365227738	96.99531646	12.79416033
72.00	29.5218	2.374881093	97.27348291	12.84637795
73.00	29.6139	2.378211268	97.49465422	12.86439178
74.00	29.7048	2.381058441	97.69433156	12.87979291
75.00	29.8056	2.387281046	97.97048636	12.91345267

76.00	29.9460	2.391211402	98.38375806	12.93471304
77.00	30.1286	2.398228589	99.00639055	12.97267091
78.00	30.2883	2.418978478	99.61345989	13.08491271
79.00	30.4111	2.4484765	100.0208359	13.24447553
80.00	30.5402	2.483607154	100.4071523	13.4345068
81.00	30.6869	2.525978538	100.8947091	13.66370514
82.00	30.8193	2.562474777	101.3711802	13.86112323
83.00	30.9344	2.589197747	101.7638912	14.00567504
84.00	31.0495	2.614413938	102.1559289	14.14207628
85.00	31.1751	2.632112358	102.5974849	14.23781185
86.00	31.3248	2.639758931	103.1503484	14.27917424
87.00	31.4859	2.641984581	103.7322695	14.29121339
88.00	31.6477	2.644004216	104.2764728	14.30213815
89.00	31.8099	2.649051105	104.848127	14.32943814
90.00	31.9730	2.65572952	105.4454852	14.3655635
91.00	32.1345	2.660520602	106.0482683	14.39147977
92.00	32.2477	2.654159664	106.3999196	14.35707173
93.00	32.2911	2.635384555	106.3746577	14.25551206
94.00	32.3139	2.614300927	106.2585985	14.14146498
95.00	32.3394	2.592062831	106.1668027	14.02117306
96.00	32.3603	2.567648417	106.0307713	13.88910885
97.00	32.3810	2.546037138	105.8620989	13.77220757
98.00	32.4054	2.528528546	105.7239117	13.67749883
99.00	32.4273	2.510994071	105.5948789	13.58265009
100.00	32.4511	2.49818033	105.5286414	13.51333707
101.00	32.4786	2.497601558	105.4583825	13.51020634
102.00	32.5017	2.501668744	105.30266	13.53220686
103.00	32.5179	2.503901453	105.1529602	13.54428418
104.00	32.5364	2.503089538	104.9949226	13.53989231
105.00	32.5631	2.498811529	104.8637352	13.5167514
106.00	32.5882	2.498065198	104.7666385	13.51271429
107.00	32.6058	2.502485168	104.6431868	13.53662311
108.00	32.6210	2.500943452	104.4580524	13.52828355
109.00	32.6358	2.485951536	104.2419233	13.4471882
110.00	32.6518	2.46956057	104.0865425	13.35852501
111.00	32.6752	2.456702708	103.9732554	13.28897333

112.00	32.7089	2.44694667	103.9420966	13.23620027
113.00	32.7665	2.439922866	104.038083	13.1982066
114.00	32.8279	2.43803256	104.133527	13.18798142
115.00	32.8638	2.447382628	104.0920943	13.23855848
116.00	32.8892	2.461933151	103.9698093	13.31726622
117.00	32.9149	2.477327213	103.8771957	13.40053689
118.00	32.9404	2.492624766	103.7855155	13.48328552
119.00	32.9652	2.507629584	103.6753431	13.56445066