

Data base used for training Decision Support System (DSS)

S.No	Biomass/Raw Material	Biomass Characteristics						Liquefaction Conditions							Products	
		%C	%H	%N	%O	%M	%A	T (°C)	P (bar)	t (min)	Cat	CL (%)	Sol	S/B (mL/g)	%Y	HHV
1	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	50	60	Ca(OH) ₂	3	Ethanol	13.3	39.6	35.0
2	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	250	50	60	Ca(OH) ₂	3	Ethanol	13.3	35.2	35.6
3	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	350	50	60	Ca(OH) ₂	3	Ethanol	13.3	35.7	342
4	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	200	50	60	Ca(OH) ₂	3	Ethanol	13.3	21.5	33.1
5	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	400	50	60	Ca(OH) ₂	3	Ethanol	13.3	22.6	36.1
6	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	45	60	Ca(OH) ₂	3	Ethanol	13.3	32.1	35.1
7	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	40	60	Ca(OH) ₂	3	Ethanol	13.3	27.5	29.2
8	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	35	60	Ca(OH) ₂	3	Ethanol	13.3	20.1	27.2
9	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	30	60	Ca(OH) ₂	3	Ethanol	13.3	18.7	20.5
10	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	50	55	Ca(OH) ₂	3	Ethanol	13.3	34.5	30.2
11	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	50	50	Ca(OH) ₂	3	Ethanol	13.3	30.7	29.5
12	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	50	45	Ca(OH) ₂	3	Ethanol	13.3	25.8	28.9
13	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	50	40	Ca(OH) ₂	3	Ethanol	13.3	20.2	28.2
14	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	50	60	Ca(OH) ₂	1	Ethanol	13.3	34.2	25.6

15	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	50	60	Ca(OH) ₂	2	Ethanol	13.3	37.5	30.6
16	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	50	60	Ca(OH) ₂	4	Ethanol	13.3	37.2	33.5
17	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	50	60	Ca(OH) ₂	5	Ethanol	13.3	37.6	33.2
18	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	400	50	60	Ca(OH) ₂	2	Ethanol	13.3	20.2	30.1
19	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	45	60	Ca(OH) ₂	4	Ethanol	13.3	32.4	36.2
20	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	40	60	Ca(OH) ₂	5	Ethanol	13.3	29.2	32.5
21	Scenedesmus obliquus	54.1	7.8	7.0	30.66	9.53	6.12	300	35	60	Ca(OH) ₂	1	Ethanol	13.3	20.1	27.2
22	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	60	NaOH	4	Ethanol	13.3	35.5	36.5
23	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	250	50	60	NaOH	4	Ethanol	13.3	32.6	33
24	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	350	50	60	NaOH	4	Ethanol	13.3	33.5	34.1
25	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	200	50	60	NaOH	4	Ethanol	13.3	28	26
26	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	400	50	60	NaOH	4	Ethanol	13.3	25	34.5
27	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	45	60	NaOH	4	Ethanol	13.3	29	32
28	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	40	60	NaOH	4	Ethanol	13.3	25	29
29	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	35	60	NaOH	4	Ethanol	13.3	22	27
30	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	30	60	NaOH	4	Ethanol	13.3	20	26

31	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	55	NaOH	4	Ethanol	13.3	30	34
32	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	50	NaOH	4	Ethanol	13.3	28	32
33	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	45	NaOH	4	Ethanol	13.3	25	30
34	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	40	NaOH	4	Ethanol	13.3	20	27
35	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	60	NaOH	1	Ethanol	13.3	30	32
36	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	60	NaOH	2	Ethanol	13.3	31	32
37	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	60	NaOH	3	Ethanol	13.3	33	33
38	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	60	NaOH	5	Ethanol	13.3	34	36
39	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	50	60	ZnO	3	Water	13.3	29.4	29.5
40	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	200	50	60	ZnO	3	Water	13.3	20	19
41	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	250	50	60	ZnO	3	Water	13.3	25	24
42	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	350	50	60	ZnO	3	Water	13.3	28	29.2
43	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	400	50	60	ZnO	3	Water	13.3	24	29.5
44	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	45	60	ZnO	3	Water	13.3	25	26
45	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	40	60	ZnO	3	Water	13.3	24	24
46	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	35	60	ZnO	3	Water	13.3	20	21.5
47	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	30	60	ZnO	3	Water	13.3	17.5	18

48	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	50	55	ZnO	3	Water	13.3	27	28
49	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	50	50	ZnO	3	Water	13.3	25	26
50	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	50	45	ZnO	3	Water	13.3	22	24
51	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	50	40	ZnO	3	Water	13.3	20	22
52	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	50	60	ZnO	1	Water	13.3	20	21.2
53	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	50	60	ZnO	2	Water	13.3	22.5	23.5
54	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	50	60	ZnO	4	Water	13.3	23.7	24.5
55	Chlorella vulgaris	58.2	6.5	6.7	27.3	10.2	11.2	300	50	60	ZnO	5	Water	13.3	24.5	29.1
60	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	280	45	15	CaO/ZrO ₂	10	Ethanol	16.7	29.5	22.4
61	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	250	45	15	CaO/ZrO ₂	10	Ethanol	16.7	28.2	22.1
62	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	300	45	15	CaO/ZrO ₂	10	Ethanol	16.7	29.2	22.2
63	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	320	45	15	CaO/ZrO ₂	10	Ethanol	16.7	27.5	23
64	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	350	45	15	CaO/ZrO ₂	10	Ethanol	16.7	25.2	21.2
65	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	375	45	15	CaO/ZrO ₂	10	Ethanol	16.7	23.6	22.1
66	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	400	45	15	CaO/ZrO ₂	10	Ethanol	16.7	20.1	22.5
67	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	250	45	15	CaO/ZrO ₂	10	Ethanol	16.7	28.2	22.1
68	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	200	45	15	CaO/ZrO ₂	10	Ethanol	16.7	22.8	20.5

69	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	280	25	15	CaO/ZrO ₂	10	Ethanol	16.7	29.5	22.4
70	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	280	28	15	CaO/ZrO ₂	10	Ethanol	16.7	28.2	22.1
71	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	280	30	15	CaO/ZrO ₂	10	Ethanol	16.7	29.2	22.2
72	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	280	35	15	CaO/ZrO ₂	10	Ethanol	16.7	27.5	23
73	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	280	40	15	CaO/ZrO ₂	10	Ethanol	16.7	28.5	22.1
74	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	280	50	15	CaO/ZrO ₂	10	Ethanol	16.7	25.2	21.2
75	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	280	55	15	CaO/ZrO ₂	10	Ethanol	16.7	23.6	22.1
76	Sargassum tenerrimum	36.3	3.8	0.8	56.2	6.1	24.5	280	60	15	CaO/ZrO ₂	10	Ethanol	16.7	20.1	22.5
77	Prosopis juliflora	77.9	13.2	0.2	6.84	11.5	1.5	420	50	60	Bentonite	3	Water	13.3	32.1	45.2
78	Prosopis juliflora	77.9	13.2	0.2	6.84	11.5	1.5	250	50	60	Bentonite	3	Water	13.3	22.5	23.5
79	Prosopis juliflora	77.9	13.2	0.2	6.84	11.5	1.5	300	50	60	Bentonite	3	Water	13.3	23.7	24.5
80	Prosopis juliflora	77.9	13.2	0.2	6.84	11.5	1.5	350	50	60	Bentonite	3	Water	13.3	24.5	29.1
81	Prosopis juliflora	77.9	13.2	0.2	6.84	11.5	1.5	400	50	60	Bentonite	3	Water	13.3	29.5	22.4
82	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	45	NaOH	4	Ethanol	13.3	25	30
83	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	40	NaOH	4	Ethanol	13.3	20	27
84	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	60	NaOH	1	Ethanol	13.3	30	32
85	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	60	NaOH	2	Ethanol	13.3	31	32

86	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	60	NaOH	3	Ethanol	13.3	33	33
87	Scenedesmus abundans	52.3	7.4	7.5	31.73	2.36	9.82	300	50	60	NaOH	5	Ethanol	13.3	34	36
88	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	420	50	60	Ca(OH) ₂	3	Water/ acetone	13.3	25.4	28.4
89	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	400	50	60	Ca(OH) ₂	3	Water/ acetone	13.3	24	17
90	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	380	50	60	Ca(OH) ₂	3	Water/ acetone	13.3	22	26
91	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	360	50	60	Ca(OH) ₂	3	Water/ acetone	13.3	21	26
92	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	340	50	60	Ca(OH) ₂	3	Water/ acetone	13.3	20	25
93	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	320	50	60	Ca(OH) ₂	3	Water/ acetone	13.3	19	25
94	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	420	45	60	Ca(OH) ₂	3	Water/ acetone	13.3	23	26
95	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	400	45	60	Ca(OH) ₂	3	Water/ acetone	13.3	22	25
96	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	380	45	60	Ca(OH) ₂	3	Water/ acetone	13.3	20	25
97	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	360	45	60	Ca(OH) ₂	3	Water/ acetone	13.3	19	24
98	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	340	45	60	Ca(OH) ₂	3	Water/ acetone	13.3	19	23
99	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	320	45	60	Ca(OH) ₂	3	Water/ acetone	13.3	17	22
100	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	420	40	60	Ca(OH) ₂	3	Water/ acetone	13.3	20	24
101	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	400	40	60	Ca(OH) ₂	3	Water/ acetone	13.3	18	23
102	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	380	40	60	Ca(OH) ₂	3	Water/ acetone	13.3	18	22
103	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	360	40	60	Ca(OH) ₂	3	Water/ acetone	13.3	16	21
104	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	340	40	60	Ca(OH) ₂	3	Water/ acetone	13.3	15	21
105	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	320	40	60	Ca(OH) ₂	3	Water/	13.3	14	20

													acetone			
106	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	420	35	60	Ca(OH) ₂	3	Water/ acetone	13.3	23	25
107	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	400	35	60	Ca(OH) ₂	3	Water/ acetone	13.3	22	24
108	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	380	35	60	Ca(OH) ₂	3	Water/ acetone	13.3	21	22
109	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	360	35	60	Ca(OH) ₂	3	Water/ acetone	13.3	20	20
110	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	340	35	60	Ca(OH) ₂	3	Water/ acetone	13.3	19	19
111	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	320	35	60	Ca(OH) ₂	3	Water/ acetone	13.3	18	18
112	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	420	30	60	Ca(OH) ₂	3	Water/ acetone	13.3	21	23
113	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	400	30	60	Ca(OH) ₂	3	Water/ acetone	13.3	19	21
114	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	380	30	60	Ca(OH) ₂	3	Water/ acetone	13.3	18	20
115	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	360	30	60	Ca(OH) ₂	3	Water/ acetone	13.3	17	19
116	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	340	30	60	Ca(OH) ₂	3	Water/ acetone	13.3	16	18
117	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	320	30	60	Ca(OH) ₂	3	Water/ acetone	13.3	15	17
118	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	420	50	45	Ca(OH) ₂	3	Water/ acetone	13.3	21	19
119	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	400	50	45	Ca(OH) ₂	3	Water/ acetone	13.3	20	18
120	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	380	50	45	Ca(OH) ₂	3	Water/ acetone	13.3	18	17
121	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	360	50	45	Ca(OH) ₂	3	Water/ acetone	13.3	16	17
122	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	340	50	45	Ca(OH) ₂	3	Water/ acetone	13.3	15	16
123	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	320	50	45	Ca(OH) ₂	3	Water/ acetone	13.3	14	16
124	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	420	50	30	Ca(OH) ₂	3	Water/ acetone	13.3	20	19

125	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	400	50	30	Ca(OH) ₂	3	Water/ acetone	13.3	18	18
126	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	380	50	30	Ca(OH) ₂	3	Water/ acetone	13.3	17	17
127	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	360	50	30	Ca(OH) ₂	3	Water/ acetone	13.3	16	17
128	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	340	50	30	Ca(OH) ₂	3	Water/ acetone	13.3	15	16
129	Ulva lactua	51.4	10.2	0.8	36.4	6.8	12.4	320	50	30	Ca(OH) ₂	3	Water/ acetone	13.3	13	16
130	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	420	50	60	Bentonite	4	Water/ acetone	13.3	28.2	29.8
131	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	400	50	60	Bentonite	4	Water/ acetone	13.3	26	28
132	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	380	50	60	Bentonite	4	Water/ acetone	13.3	25	27
133	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	360	50	60	Bentonite	4	Water/ acetone	13.3	24	26
134	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	340	50	60	Bentonite	4	Water/ acetone	13.3	24	25
135	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	320	50	60	Bentonite	4	Water/ acetone	13.3	22	25
136	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	420	45	60	Bentonite	4	Water/ acetone	13.3	26	24
137	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	400	45	60	Bentonite	4	Water/ acetone	13.3	24	23
138	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	380	45	60	Bentonite	4	Water/ acetone	13.3	23	22
139	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	360	45	60	Bentonite	4	Water/ acetone	13.3	21	22
140	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	340	45	60	Bentonite	4	Water/ acetone	13.3	19	21
141	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	320	45	60	Bentonite	4	Water/ acetone	13.3	18	20
142	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	420	40	60	Bentonite	4	Water/ acetone	13.3	23	24
143	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	400	40	60	Bentonite	4	Water/ acetone	13.3	22	23

144	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	380	40	60	Bentonite	4	Water/ acetone	13.3	22	22
145	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	360	40	60	Bentonite	4	Water/ acetone	13.3	20	21
146	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	340	40	60	Bentonite	4	Water/ acetone	13.3	18	21
147	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	320	40	60	Bentonite	4	Water/ acetone	13.3	16	20
148	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	420	35	60	Bentonite	4	Water/ acetone	13.3	20	24
149	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	400	35	60	Bentonite	4	Water/ acetone	13.3	18	23
150	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	380	35	60	Bentonite	4	Water/ acetone	13.3	18	21
151	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	360	35	60	Bentonite	4	Water/ acetone	13.3	17	20
152	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	340	35	60	Bentonite	4	Water/ acetone	13.3	16	18
153	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	320	35	60	Bentonite	4	Water/ acetone	13.3	15	18
154	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	420	30	60	Bentonite	4	Water/ acetone	13.3	21	22
155	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	400	30	60	Bentonite	4	Water/ acetone	13.3	20	21
156	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	380	30	60	Bentonite	4	Water/ acetone	13.3	18	20
157	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	360	30	60	Bentonite	4	Water/ acetone	13.3	17	18
158	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	340	30	60	Bentonite	4	Water/ acetone	13.3	16	18
159	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	320	30	60	Bentonite	4	Water/ acetone	13.3	15	17
160	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	420	50	45	Bentonite	4	Water/ acetone	13.3	22	23
161	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	400	50	45	Bentonite	4	Water/ acetone	13.3	21	22
162	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	380	50	45	Bentonite	4	Water/ acetone	13.3	20	20

163	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	360	50	45	Bentonite	4	Water/acetone	13.3	18	19
164	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	340	50	45	Bentonite	4	Water/acetone	13.3	17	18
165	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	320	50	45	Bentonite	4	Water/acetone	13.3	15	16
166	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	420	50	30	Bentonite	4	Water/acetone	13.3	21	20
167	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	400	50	30	Bentonite	4	Water/acetone	13.3	20	18
168	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	380	50	30	Bentonite	4	Water/acetone	13.3	18	17
169	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	360	50	30	Bentonite	4	Water/acetone	13.3	16	17
170	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	340	50	30	Bentonite	4	Water/acetone	13.3	15	16
171	Amphiroa fragilissima	41.2	6.9	1.2	49.8	8.9	17.6	320	50	30	Bentonite	4	Water/acetone	13.3	14	16
172	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	300	45	60	K ₂ CO ₃	2	Water	6	22.8	30.2
173	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	280	45	60	K ₂ CO ₃	2	Water	6	21	28
174	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	260	45	60	K ₂ CO ₃	2	Water	6	20	26
175	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	240	45	60	K ₂ CO ₃	2	Water	6	18	27
176	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	320	45	60	K ₂ CO ₃	2	Water	6	15	28
177	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	340	45	60	K ₂ CO ₃	2	Water	6	16	29
178	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	300	40	60	K ₂ CO ₃	2	Water	6	20	26
179	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	280	40	60	K ₂ CO ₃	2	Water	6	18	24
180	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	260	40	60	K ₂ CO ₃	2	Water	6	17	23

181	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	240	40	60	K ₂ CO ₃	2	Water	6	16	22
182	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	320	40	60	K ₂ CO ₃	2	Water	6	15	23
183	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	340	40	60	K ₂ CO ₃	2	Water	6	15	24
184	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	300	35	60	K ₂ CO ₃	2	Water	6	21	26
185	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	280	35	60	K ₂ CO ₃	2	Water	6	18	27
186	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	260	35	60	K ₂ CO ₃	2	Water	6	17	25
187	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	240	35	60	K ₂ CO ₃	2	Water	6	16	24
188	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	320	35	60	K ₂ CO ₃	2	Water	6	15	25
189	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	340	35	60	K ₂ CO ₃	2	Water	6	17	26
190	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	300	30	60	K ₂ CO ₃	2	Water	6	16	24
191	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	280	30	60	K ₂ CO ₃	2	Water	6	15	22
192	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	260	30	60	K ₂ CO ₃	2	Water	6	14	21
193	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	240	30	60	K ₂ CO ₃	2	Water	6	13	20
194	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	320	30	60	K ₂ CO ₃	2	Water	6	12	22
195	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	340	30	60	K ₂ CO ₃	2	Water	6	15	25
196	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	300	45	45	K ₂ CO ₃	2	Water	6	18	23

197	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	280	45	45	K ₂ CO ₃	2	Water	6	17	22
198	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	260	45	45	K ₂ CO ₃	2	Water	6	16	21
199	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	240	45	45	K ₂ CO ₃	2	Water	6	15	19
200	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	320	45	45	K ₂ CO ₃	2	Water	6	16	22
201	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	340	45	45	K ₂ CO ₃	2	Water	6	17	23
202	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	300	45	30	K ₂ CO ₃	2	Water	6	16	22
203	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	280	45	30	K ₂ CO ₃	2	Water	6	15	20
204	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	260	45	30	K ₂ CO ₃	2	Water	6	14	18
205	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	240	45	30	K ₂ CO ₃	2	Water	6	13	16
206	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	320	45	30	K ₂ CO ₃	2	Water	6	12	15
207	Castor residue	44.5	4.8	5.1	45.2	10.8	5.1	340	45	30	K ₂ CO ₃	2	Water	6	10	17
208	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	280	45	15	K ₂ CO ₃	2	Water	6	23.4	25.8
209	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	260	45	15	K ₂ CO ₃	2	Water	6	21	24
210	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	240	45	15	K ₂ CO ₃	2	Water	6	19	23
211	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	300	45	15	K ₂ CO ₃	2	Water	6	23	25
212	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	320	45	15	K ₂ CO ₃	2	Water	6	22	26
213	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	340	45	15	K ₂ CO ₃	2	Water	6	21	25

214	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	280	40	15	K ₂ CO ₃	2	Water	6	22	23
215	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	260	40	15	K ₂ CO ₃	2	Water	6	21	24
216	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	240	40	15	K ₂ CO ₃	2	Water	6	23	22
217	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	300	40	15	K ₂ CO ₃	2	Water	6	22	21
218	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	320	40	15	K ₂ CO ₃	2	Water	6	21	22
219	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	340	40	15	K ₂ CO ₃	2	Water	6	22	23
220	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	280	35	15	K ₂ CO ₃	2	Water	6	22	24
221	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	260	35	15	K ₂ CO ₃	2	Water	6	21	23
222	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	240	35	15	K ₂ CO ₃	2	Water	6	20	21
223	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	300	35	15	K ₂ CO ₃	2	Water	6	18	19
224	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	320	35	15	K ₂ CO ₃	2	Water	6	16	21
225	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	340	35	15	K ₂ CO ₃	2	Water	6	17	22
226	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	280	50	15	K ₂ CO ₃	2	Water	6	21	23
227	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	260	50	15	K ₂ CO ₃	2	Water	6	20	21
228	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	240	50	15	K ₂ CO ₃	2	Water	6	18	22
229	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	300	50	15	K ₂ CO ₃	2	Water	6	17	23
230	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	320	50	15	K ₂ CO ₃	2	Water	6	18	21
231	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	340	50	15	K ₂ CO ₃	2	Water	6	16	22
232	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	280	45	30	K ₂ CO ₃	2	Water	6	18	20

233	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	260	45	30	K ₂ CO ₃	2	Water	6	16	18
234	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	240	45	30	K ₂ CO ₃	2	Water	6	15	16
235	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	300	45	30	K ₂ CO ₃	2	Water	6	13	16
236	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	320	45	30	K ₂ CO ₃	2	Water	6	12	15
237	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	340	45	30	K ₂ CO ₃	2	Water	6	12	17
238	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	280	35	30	K ₂ CO ₃	2	Water	6	16	16
239	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	260	35	30	K ₂ CO ₃	2	Water	6	15	15
240	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	240	35	30	K ₂ CO ₃	2	Water	6	15	16
241	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	300	35	30	K ₂ CO ₃	2	Water	6	14	15
242	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	320	35	30	K ₂ CO ₃	2	Water	6	13	15
243	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	340	35	30	K ₂ CO ₃	2	Water	6	11	14
244	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	280	40	30	K ₂ CO ₃	2	Water	6	15	16
245	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	260	40	30	K ₂ CO ₃	2	Water	6	14	15
246	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	240	40	30	K ₂ CO ₃	2	Water	6	14	15
247	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	300	40	30	K ₂ CO ₃	2	Water	6	13	14
248	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	320	40	30	K ₂ CO ₃	2	Water	6	12	13
249	Cypress wood	42.1	5.1	0.3	48.1	11.2	0.5	340	40	30	K ₂ CO ₃	2	Water	6	12	12
250	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	45	15	CsOH	3	Water	6	20.4	21.4
251	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	45	15	CsOH	3	Water	6	18	22
252	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	45	15	CsOH	3	Water	6	15	23
253	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	45	15	CsOH	3	Water	6	21	21

254	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	45	15	CsOH	3	Water	6	20	21
255	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	45	15	CsOH	3	Water	6	19.2	20
256	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	40	15	CsOH	3	Water	6	19	18
257	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	35	15	CsOH	3	Water	6	18	17
258	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	30	15	CsOH	3	Water	6	17	18
259	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	50	15	CsOH	3	Water	6	15	16.3
260	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	40	15	CsOH	3	Water	6	17	20
261	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	35	15	CsOH	3	Water	6	16	19
262	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	30	15	CsOH	3	Water	6	16	18
263	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	50	15	CsOH	3	Water	6	14	18
264	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	40	15	CsOH	3	Water	6	14	21
265	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	35	15	CsOH	3	Water	6	13	21
266	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	30	15	CsOH	3	Water	6	13	20
267	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	50	15	CsOH	3	Water	6	12	19
268	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	40	15	CsOH	3	Water	6	20	22
269	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	35	15	CsOH	3	Water	6	19	21
270	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	30	15	CsOH	3	Water	6	19	20
271	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	50	15	CsOH	3	Water	6	18	21
272	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	40	15	CsOH	3	Water	6	19	19
273	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	35	15	CsOH	3	Water	6	19	18
274	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	30	15	CsOH	3	Water	6	18	17
275	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	50	15	CsOH	3	Water	6	16	17
276	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	40	15	CsOH	3	Water	6	18	18
277	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	35	15	CsOH	3	Water	6	17	18
278	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	30	15	CsOH	3	Water	6	16	16
279	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	50	15	CsOH	3	Water	6	16	17
280	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	45	30	CsOH	3	Water	6	18	19
281	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	45	30	CsOH	3	Water	6	17	18
282	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	45	30	CsOH	3	Water	6	16	18
283	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	45	30	CsOH	3	Water	6	15	17.5
284	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	45	30	CsOH	3	Water	6	14	17
285	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	45	30	CsOH	3	Water	6	14	18
286	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	40	30	CsOH	3	Water	6	16	19
287	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	40	30	CsOH	3	Water	6	16	18

288	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	40	30	CsOH	3	Water	6	15	17
289	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	40	30	CsOH	3	Water	6	14	16
290	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	40	30	CsOH	3	Water	6	13	15
291	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	40	30	CsOH	3	Water	6	13	14
292	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	35	30	CsOH	3	Water	6	15	15
293	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	35	30	CsOH	3	Water	6	15	14
294	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	35	30	CsOH	3	Water	6	14	14
295	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	35	30	CsOH	3	Water	6	14	13
296	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	35	30	CsOH	3	Water	6	13	14
297	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	35	30	CsOH	3	Water	6	13	14
298	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	30	30	CsOH	3	Water	6	16	16
299	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	30	30	CsOH	3	Water	6	16	15
300	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	30	30	CsOH	3	Water	6	15	16
301	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	30	30	CsOH	3	Water	6	14	17
302	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	30	30	CsOH	3	Water	6	13	16
303	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	30	30	CsOH	3	Water	6	13	16
304	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	280	50	30	CsOH	3	Water	6	14	15
305	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	260	50	30	CsOH	3	Water	6	14	14
306	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	240	50	30	CsOH	3	Water	6	13	14
307	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	300	50	30	CsOH	3	Water	6	13	15
308	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	320	50	30	CsOH	3	Water	6	12	14
309	Pine wood	58.2	4.5	0.1	35.6	18.4	2.5	340	50	30	CsOH	3	Water	6	11	14