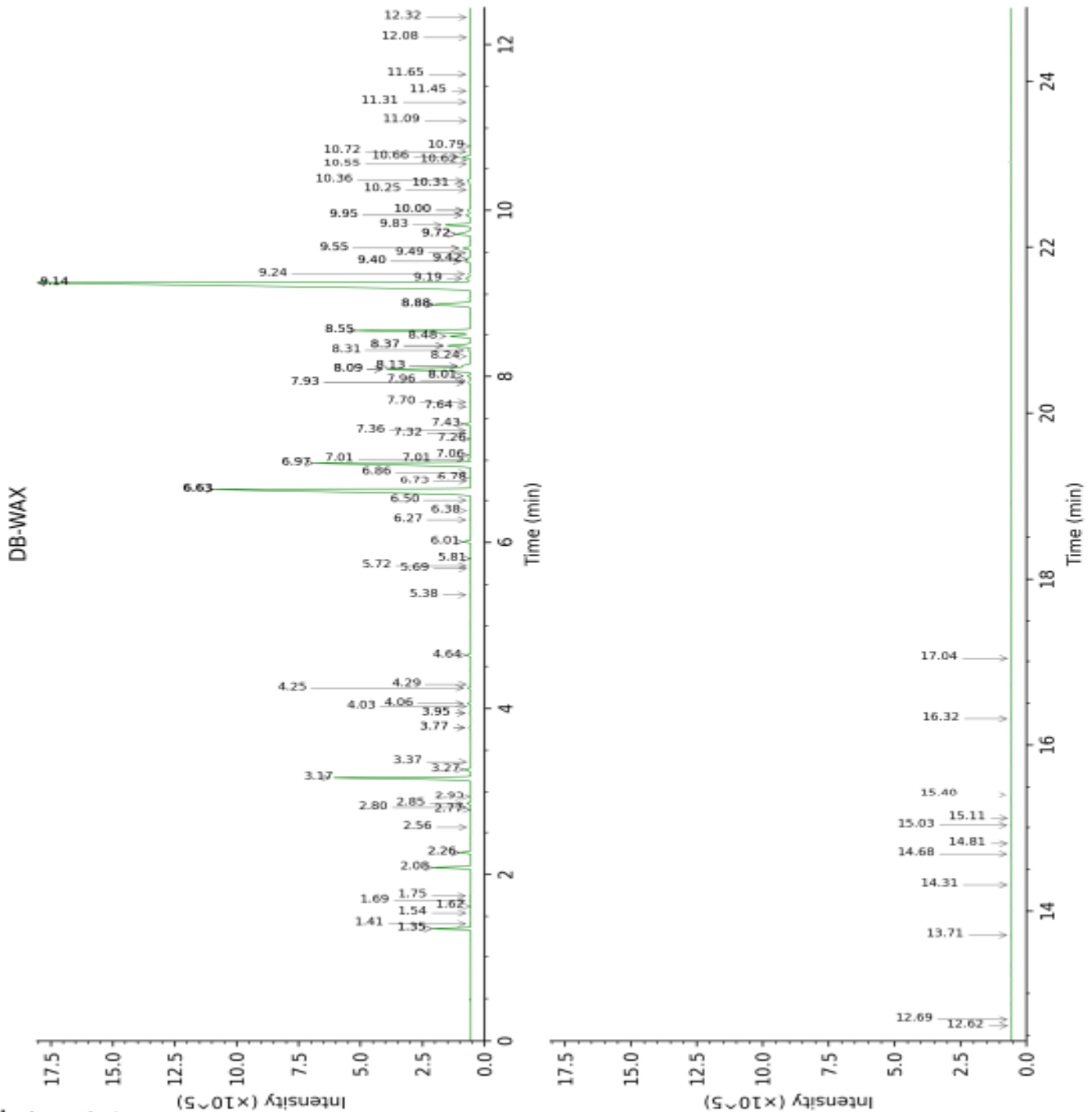


**GCMS ANALYSIS**

PRODUCT NAME: PEPPERMINT ESSENTIAL OIL (JAPANESE) -VERIFIED BY ECOCERT/COSMOS APPROVED – 11115

DATE: March 22, 2022



*Due to volume turnover, this report is not lot specific, It is representative of the quality of this oil produced by the manufacturer of this product, Specific lots may vary slightly as is the case in natural products,*

GCMS ANALYSIS (cont'd.)

PRODUCT NAME: PEPPERMINT ESSENTIAL OIL (JAPANESE) -VERIFIED BY ECOCERT/COSMOS APPROVED – 11115

PEAK	RT (MIN)	COMPOUND NAME	%
1	1,97	(3Z)-HEXENOL	0,02
2	2,16	HEXANOL	0,03
3	2,41	TRANS-2,5-DIETHYLTETRAHYDROFURAN	0,02
4	2,66	HASHISHENE	0,01
5	2,81	$\alpha$ -THUJENE	0,04
6	2,88	$\alpha$ -PINENE	1,30
7	3,07	3-METHYLCYCLOHEXANONE	0,27
8	3,09*	CAMPHENE	[0,27]
9	3,09*	$\alpha$ -FENCHENE	[0,27]
10	3,16	THUJA-2,4(10)-DIENE	0,02
11	3,48*	$\beta$ -PINENE	1,91
12	3,48*	SABINENE	[1,91]
13	3,48*	CIS-PARA-MENTHANE	[1,91]
14	3,64	OCTEN-3-OL	0,04
15	3,70	CIS-CARANE	0,01
16	3,74	OCTAN-3-ONE	0,02
17	3,80	MYRCENE	0,15
18	3,93*	PSEUDOLIMONENE	0,33
19	3,93*	$\alpha$ -PHELLANDRENE	[0,33]
20	3,93*	MENTHATRIENE ISOMER I	[0,33]
21	3,93*	OCTAN-3-OL	[0,33]
22	4,02	$\delta$ 3-CARENE	0,01
23	4,13	$\alpha$ -TERPINENE	0,04
24	4,20	META-CYMENE	0,01
25	4,25	PARA-CYMENE	0,15
26	4,34*	LIMONENE	6,56
27	4,34*	1,8-CINEOLE	[6,56]
28	4,46	2-ETHYLHEXANOL	0,02
29	4,57	(Z)-B-OCIMENE	0,01
30	4,69	(E)-B-OCIMENE	0,08

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GCMS ANALYSIS (cont'd.)

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PEAK	RT (MIN)	COMPOUND NAME	%
31	4,80	γ-TERPINENE	0,07
32	4,95	C/S-SABINENE HYDRATE	0,01
33	5,04	C/S-LINALOOL OXIDE (FUR,)	0,03
34	5,14	OCTANOL	0,21
35	5,20	TERPINOLENE ISOMER	0,02
36	5,25	TERPINOLENE	0,17
37	5,27	PARA-CYMENENE	[0,17]
38	5,34	UNKNOWN [M/Z 81, 43(78), 55 (47), 96 (46), 95(31), 41 (23),,,]	0,03
39	5,41	TRANS-SABINENEHYDRATE	0,05
40	5,54*	LINALOOL	0,19
41	5,54*	NONAN-3-OL	[0,19]
42	5,54*	NONANAL	[0,19]
43	5,61	1,3,8-PARA- MENTHATRIENE	0,01
44	5,68	PHENYLETHYL ALCOHOL	0,01
45	5,81	TRANS-PARA-MENTHA-2,8- DIEN-1-OL	0,07
46	5,95	C/S-LIMONENE OXIDE	0,03
47	6,03	C/S-PARA-MENTHA-2,8- DIEN-1-OL	0,04
48	6,06	TRANS-SABINOL	0,06
49	6,18	ISOPULEGOL	1,51
50	6,32	MENTHONE	18,96
51	6,36	ISO-ISOPULEGOL	0,06
52	6,46*	BORNEOL	9,11
53	6,46*	ISOMENTHONE	[9,11]
54	6,46*	MENTHOFURAN	[9,11]
55	6,52*	NEO-MENTHOL	5,52
56	6,52*	δ-TERPINEOL	[5,52]
57	6,62*	TERPINEN-4-OL	38,88
58	6,62*	LAVANDULOL	[38,88]
59	6,75	MENTHOL	[38,88]
60	6,79	ISOMENTHOL	1,03

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: PEPPERMINT ESSENTIAL OIL (JAPANESE) -VERIFIED BY ECOCERT/COSMOS APPROVED – 11115

PEAK	RT (MIN)	COMPOUND NAME	%
61	6,84*	ISOPULEGOL ISOMER?	0,12
62	6,84*	PARA-CYMEN-8-OL	[0,12]
63	6,91*	NEOISO-MENTHOL	0,73
64	6,91*	α-TERPINEOL	[0,73]
65	6,96	MYRTENOL	0,02
66	6,99	METHYLCHAVICOL	0,10
67	7,04	TRANS-ISOPIPERITENOL	0,08
68	7,08	UNKNOWN [M/Z 43, 99(84), 81 (46), 986 (43),126 (36), 71 (28),,, 170(12)]	0,03
69	7,13	TRANS-PIPERITOL	0,02
70	7,29	OCTYL ACETATE	0,01
71	7,35	TRANS-CARVEOL	0,03
72	7,40	UNKNOWN [M/Z 109, 85(79), 41 (59), 55 (54), 95(47), 82 (40),,, 152 (16)]	0,02
73	7,52	CIS-CARVEOL	0,03
74	7,57	PULEGONE	1,39
75	7,65	CARVONE	0,04
76	7,80	PIPERITONE	1,20
77	8,05	ISOPIPERITENONE	0,03
78	8,16	NEO-MENTHYL ACETATE	0,02
79	8,21	DECANOL	0,33
80	8,27	2-ETHYLMENTHONE?	0,03
81	8,45	MENTHYL ACETATE	3,16
82	8,51	DIHYDROEDULAN II	0,01
83	8,61	THYMOL	0,03
84	8,64	ISOMENTHYL ACETATE	0,03
85	8,72	UNKNOWN [M/Z 43, 136(55), 121 (55), 107 (48), 93 (48), 81 (30)79,(29),,,]	0,01
86	8,78	UNKNOWN [M/Z 43, 121(78), 107 (70), 136 (69),93 (66), 137 (50),,, 196?(T)]	0,01
87	9,00	BICYCLOELEMENE	0,14
88	9,18	α-CUBEBENE	0,02
89	9,34	EUGENOL	0,03
90	9,53	α-YLANGENE	0,05

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GCMS ANALYSIS (cont'd.)

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PEAK	RT (MIN)	COMPOUND NAME	%
91	9,57	α-COPAENE	0,03
92	9,64	β-BOURBONENE	0,36
93	9,74	(3Z)-HEXENYL (3Z)-HEXENOATE	0,02
94	9,78	B-ELEMENE	0,15
95	9,81	B-LONGIPINENE	0,02
96	9,87*	ALLO-ISOLONGIFOLENE	0,12
97	9,87*	(Z)-JASMONE	[0,12]
98	9,94	LONGIFOLENE	0,02
99	9,99	ISOCARYOPHYLLENE	0,04
100	10,10*	C/S-A-BERGAMOTENE	1,35
101	10,10*	β-YLANGENE	[1,35]
102	10,10*	β-CARYOPHYLLENE	[1,35]
103	10,24	β-COPAENE	0,13
104	10,28	UNKNOWN [M/Z 177,109 (32), 192 (26), 95(25), 137 (23)]	0,01
105	10,36	AROMADENDRENE	0,07
106	10,45	TRANS-A-BERGAMOTENE	0,07
107	10,48	ISOGERMACRENE D	0,02
108	10,56	α-HUMULENE	0,30
109	10,66	MUUROLA-4,11-DIENE	0,05
110	10,72	(E)-B-FARNESENE	0,06
111	10,90	γ-MUUROLENE	0,06
112	10,94	GERMACRENE D	0,33
113	11,06	ALLO-AROMADENDR-9-ENE	0,01
114	11,14*	VIRIDIFLORENE	0,38
115	11,14*	BICYCLOGERMACRENE	[0,38]
116	11,22	5-METHYL-2,4- DIISOPROPYLPHENOL	0,05
117	11,25	α-MUUROLENE	0,02
118	11,33	ε-AMORPHENE	0,03
119	11,38	γ-CADINENE	0,05
120	11,52	δ-CADINENE	0,15

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GCMS ANALYSIS (cont'd.)

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Peak	RT (min)	Compound name	%
121	11,62	TRANS-CADINA-1,4-DIENE	0,01
122	11,69	α-CADINENE	0,01
123	11,84	(E)-A-BISABOLENE	0,01
124	12,10	(E)-NEROLIDOL	0,04
125	12,18	SPATHULENOL	0,03
126	12,22	CARYOPHYLLENE OXIDE	0,03
127	12,26	CARYOPHYLLENE OXIDE ISOMER	0,01
128	12,95	(3Z)-HEXENYLPHENYL ACETATE	0,01
129	13,00	τ -CADINOL	0,01
130	13,08	A-MUUROLOL	0,01
131	13,15	A-CADINOL	0,01
132	13,25	PRECOCENE II	0,01
133	14,03	MINT SULFIDE?	0,01
134	12,26	CARYOPHYLLENE OXIDE ISOMER	0,01
135	12,95	(3Z)-HEXENYL PHENYLACETATE	0,01
136	13,00	τ-CADINOL	0,01
137	13,08	α-MUUROLOL	0,01
138	13,15	α-CADINOL	0,01
139	13,25	PRECOCENE II	0,01
140	14,03	MINT SULFIDE?	0,01
		<b>TOTAL</b>	<b>98,98%</b>

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