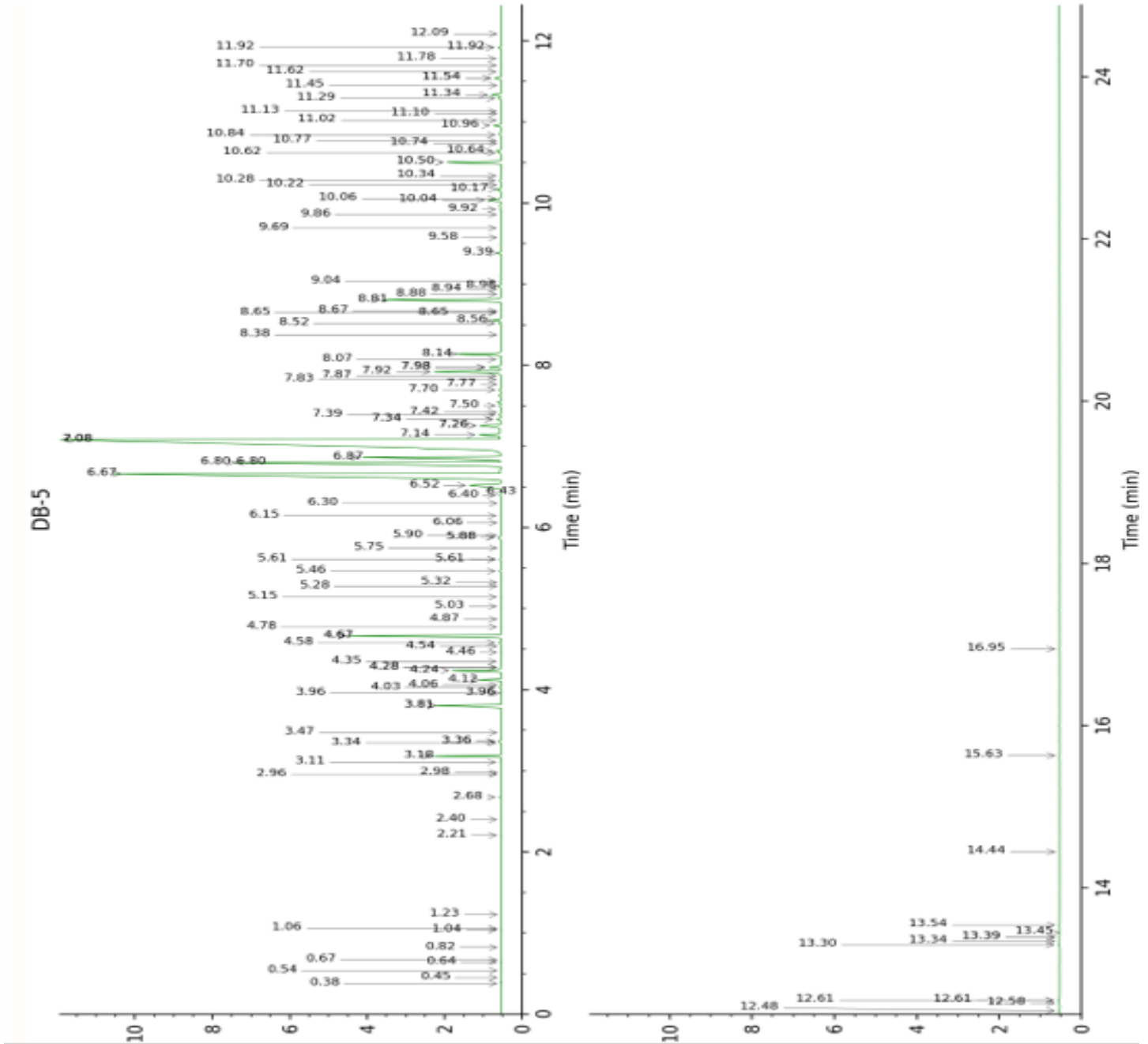


GCMS ANALYSIS

PRODUCT NAME: PEPPERMINT ESSENTIAL OIL (JAPANESE) - 11115

DATE: January 3, 2024



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,

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Peak	RT (min)	Compound name	%
1	0,38	Ethanol	tr
2	0,45	Isobutyral	tr
3	0,54	2-Methyl-3-buten-2-ol	tr
4	0,64	Isovaleral	0,01
5	0,67	2-Methylbutyral	tr
6	0,82	2-Ethylfuran	tr
7	1,04	Isoamyl alcohol	0,01
8	1,06	2-Methylbutanol	tr
9	1,23	Toluene	tr
10	2,21	(3Z)-Hexenol	0,03
11	2,40	Hexanol	0,02
12	2,68	<i>trans</i> -2,5-Diethyltetrahydrofuran	0,05
13	2,96	Hashishene	0,01
14	2,98	Tricyclene	0,01
15	3,11	α -Thujene	0,03
16	3,18	α -Pinene	1,31
17	3,34*†	3-Methylcyclohexanone	0,06
18	3,36*†	α -Fenchene	tr
19	3,36*†	Camphene	0,03
20	3,47	Thuja-2,4(10)-diene	0,01
21	3,81*	<i>cis-para</i> -Menthane	0,03
22	3,81*	Sabinene	0,43
23	3,81*	β -Pinene	1,35
24	3,96*	<i>cis</i> -Carane	0,03
25	3,96*	Octen-3-ol	0,02
26	4,03*†	<i>trans-para</i> -Menthane	0,06
27	4,06*†	Octan-3-one	0,02
28	4,12	Myrcene	0,47
29	4,24	Octan-3-ol	1,18
30	4,28*	Octanal	0,02

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Peak	RT (min)	Compound name	%
31	4,28*	Pseudolimonene	0,03
32	4,28*	α -Phellandrene	0,01
33	4,35	Δ 3-Carene	0,04
34	4,46	α -Terpinene	0,02
35	4,54	Carvomenthene	0,01
36	4,58	<i>para</i> -Cymene	0,08
37	4,67*	1,8-Cineole	0,16
38	4,67*	Limonene	3,52
39	4,67*	β -Phellandrene	0,02
40	4,78	2-Ethylhexanol	0,03
41	4,87	(<i>Z</i>)- β -Ocimene	0,02
42	5,03	(<i>E</i>)- β -Ocimene	0,03
43	5,15	γ -Terpinene	0,02
44	5,28	<i>cis</i> -Sabinene hydrate	0,01
45	5,32	<i>cis</i> -Linalool oxide (fur,)	0,01
46	5,46	Octanol	0,09
47	5,61*	Terpinolene	0,04
48	5,61*	<i>para</i> -Cymenene	0,03
49	5,75	<i>trans</i> -Sabinene hydrate	0,01
50	5,88*	Nonan-3-ol	0,02
51	5,88*	Linalool	0,12
52	5,90	Nonanal	0,02
53	6,06	Octen-3-yl acetate	0,02
54	6,15	<i>trans-para</i> -Mentha-2,8-dien-1-ol	0,05
55	6,30	<i>cis</i> -Limonene oxide	0,01
56	6,40	<i>cis-para</i> -Mentha-2,8-dien-1-ol	0,07
57	6,44	<i>trans</i> -Sabinol	0,01
58	6,52	Isopulegol	1,47
59	6,66	Menthone	20,02
60	6,80*	Menthofuran	0,04

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Peak	RT (min)	Compound name	%
61	6,80*	Isomenthone	10,04
62	6,87	neo-Menthol	4,38
63	7,08*	Terpinen-4-ol	0,74
64	7,08*	Lavandulol	0,17
65	7,08*	Menthol	38,28
66	7,14	Isomenthol	0,66
67	7,26*	neiso-Menthol	0,21
68	7,26*	Myrtenal	0,02
69	7,26*	α -Terpineol	0,47
70	7,34*	Methylchavicol	0,10
71	7,34*	Myrtenol	0,02
72	7,39	<i>trans</i> -Isopiperitenol	0,06
73	7,42	Unknown	0,02
74	7,50	<i>trans</i> -Piperitol	0,06
75	7,70	<i>trans</i> -Carveol	0,07
76	7,77	Unknown	0,02
77	7,82	<i>cis</i> -Carveol	0,02
78	7,87	Citronellol	0,03
79	7,92	Pulegone	1,83
80	7,98*	(3Z)-Hexenyl isovalerate	0,04
81	7,98*	Carvone	0,10
82	7,98*	(2E)-Hexenyl isovalerate	0,30
83	8,07	Unknown	0,03
84	8,14	Piperitone	1,18
85	8,38	Isopiperitenone	0,02
86	8,52	neo-Menthyl acetate	0,06
87	8,56	Decanol	0,27
88	8,65*	(E)-Anethole	0,03
89	8,65*	2-Ethylmenthone?	0,01
90	8,67	Dihydroedulan I	0,01

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Peak	RT (min)	Compound name	%
91	8,81	Menthyl acetate	3,27
92	8,88	Dihydroedulan II	0,03
93	8,94	Thymol	0,01
94	8,98	Isomenthyl acetate	0,10
95	9,04	Unknown	0,04
96	9,39	Bicycloelemene	0,12
97	9,58	α -Cubebene	0,02
98	9,69	Eugenol	0,04
99	9,86	α -Ylangene	0,03
100	9,92	α -Copaene	0,04
101	10,04	β -Bourbonene	0,36
102	10,06	1,5-diepi- β -Bourbonene	0,04
103	10,17	β -Elemene	0,14
104	10,22	Unknown	0,03
105	10,28	Longifolene	0,06
106	10,34	Isocaryophyllene	0,04
107	10,50*	β -Caryophyllene	1,46
108	10,50*	<i>cis</i> - α -Bergamotene	0,02
109	10,62	Unknown	0,06
110	10,64	β -Copaene	0,14
111	10,74	Aromadendrene	0,02
112	10,77	<i>trans</i> - α -Bergamotene	0,04
113	10,84	Isogermacrene D	0,06
114	10,96	α -Humulene	0,22
115	11,02	Muurolo-4,11-diene	0,03
116	11,10	9-epi- β -Caryophyllene	0,02
117	11,13	(<i>E</i>)- β -Farnesene	0,03
118	11,29	γ -Muurolene	0,08
119	11,34	Germacrene D	0,29
120	11,45	allo-Aromadendr-9-ene	0,01

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Peak	RT (min)	Compound name	%
121	11,54*	Bicyclogermacrene	0,05
122	11,54*	Viridiflorene	0,15
123	11,62	α -Muurolene	0,04
124	11,70	ϵ -Amorphene	0,03
125	11,78	γ -Cadinene	0,04
126	11,92*	δ -Cadinene	0,09
127	11,92*	<i>trans</i> -Calamenene	0,01
128	12,09	α -Cadinene	0,01
129	12,48	(<i>E</i>)-Nerolidol	0,03
130	12,58	Spathulenol	0,03
131	12,61*	Caryophyllene oxide isomer	0,02
132	12,61*	Caryophyllene oxide	0,05
133	13,30	(3 <i>Z</i>)-Hexenyl phenylacetate	0,04
134	13,34	Isospathulenol	0,02
135	13,39*	τ -Cadinol	0,01
136	13,39*	τ -Muurolol	0,02
137	13,45	α -Muurolol	0,01
138	13,54	α -Cadinol	0,02
139	14,44	Mint sulfide?	0,01
140	15,63	Octyl phenylacetate?	0,01
141	16,94	<i>meta</i> -Camphorene	0,01
		TOTAL	98,10

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