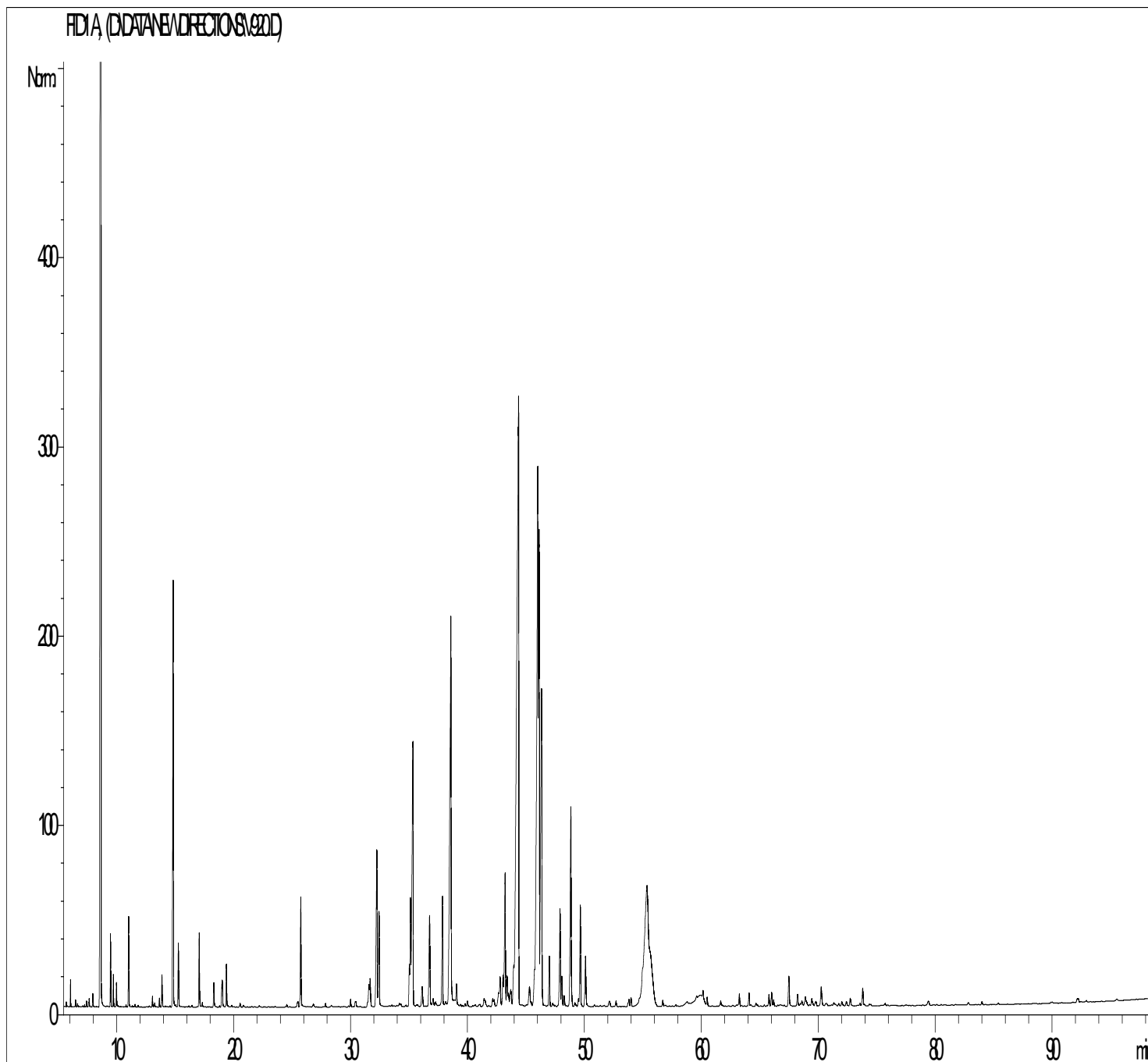


GCMS ANALYSIS

PRODUCT NAME: HELICHRYSUM ORGANIC ESSENTIAL OIL - 50067

DATE: June 5, 2019



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: HELICHRYSUM ORGANIC ESSENTIAL OIL - 50067

Peak	RT (min)	Compound name	%
1	5.7	OCTANE	0.02
2	6.0	2-METHYL-2-HEPTENE	0.10
3	6.5	NONANE	0.03
4	6.6	BUTANAL, 2-METHYL-	0.02
5	7.4	ALIPHATIC ESTER	0.03
6	7.6	3-PENTANONE	0.02
7	7.6	BORNYLENE	0.04
8	7.9	3-PENTANONE, 2-METHYL-	0.07
9	8.7	alpha-PINENE	24.07
10	9.5	alpha-FENCHENE	0.36
11	9.7	CAMPHENE	0.17
12	10.0	4-METHYL-3-HEXANONE	0.14
13	10.8	MENTHENE ISOMER Mw=138	0.01
14	11.0	beta-PINENE	0.51
15	11.6	THUYADIENE	0.02
16	11.8	TERPENE ISOMER	0.01
17	13.1	beta-MYRCENE	0.06
18	13.2	alpha-PHELLANDRENE	0.03
19	13.6	ISOBUTYL ISOBUTYRATE	0.05
20	13.9	alpha-TERPINENE	0.21
21	14.8	LIMONENE	3.00
22	15.0	DODECANE	0.02
23	15.3	1,8-CINEOLE	0.43
24	16.4	Cis-beta-OCIMENE	0.01
25	17.1	gamma-TERPINENE	0.50
26	17.3	Trans-beta-OCIMENE	0.03
27	18.3	p-CYMENE	0.18
28	19.0	2-METHYLBUTYL 2-METHYLBUTYRATE	0.11
29	19.0	TERPINOLENE	0.19
30	19.4	ISOBUTYL ANGELATE	0.29

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ORGANIC ESSENTIAL OIL - 50067

Peak	RT (min)	Compound name	%
31	19.8	ISOAMYL ISOVALERATE	0.01
32	20.6	TRIDECANE	0.03
33	20.8	3-HEXEN-1-OL ACETATE	0.02
34	22.2	6-METHYL-5-HEPTEN-2-ONE	0.01
35	24.6	4-METHYLPENTYLE ANGELATE	0.02
36	25.5	2-NONANONE	0.03
37	25.5	2-METHYLBUTYL ANGELATE	0.04
38	25.8	ISOAMYL ANGELATE	0.84
39	26.8	TETRADECANE	0.03
40	27.9	HEXYL 2-METHYLBUTYRATE	0.03
41	28.4	METHYL-p-CRESOL	0.02
42	29.9	2-METHYLBUTYLE CAPROATE	0.01
43	30.0	HEXYL ANGELATE	0.06
44	30.4	OXYDE DE NERYLE + ESTER ALIPHATIQUE	0.03
45	30.4	ALIPHATIC ESTER	0.04
46	31.5	CYCLOSATIVENE	0.03
47	31.6	YLANGENE	0.21
48	31.7	ISOLEDENE	0.29
49	32.3	alpha-COPAENE	1.66
50	32.4	ISOITALICENE	0.92
51	33.5	ALIPHATIC ESTER	0.02
52	34.0	CAMPHOR	0.02
53	34.2	2-NONANOL	0.03
54	34.3	alpha-GURJUNENE	0.03
55	34.7	BERGAMOTENE ISOMER	0.01
56	35.0	LINALOOL	0.30
57	35.1	BERGAMOTENE ISOMER	0.87
58	35.3	ITALICENE	3.15
59	35.6	ITALICENE ISOMER	0.01
60	35.7	CURCUMENE ISOMER	0.02

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ORGANIC ESSENTIAL OIL - 50067

Peak	RT (min)	Compound name	%
61	36.1	ITALICENE ISOMER	0.24
62	36.8	alpha-cis-BERGAMOTENE	0.98
63	37.1	ISOCARYOPHYLLENE	0.11
64	37.3	FENCHOL	0.06
65	37.4	3,5-DIMETHYLOCTANE-4.6-DIONE Mw=170	0.57
66	37.9	alpha-trans-BERGAMOTENE	0.93
67	38.1	CAMPHENE HYDRATE	0.03
68	38.6	beta-CARYOPHYLLENE + TERPINENE-4-OL	5.33
69	39.1	6.9-GUAIADIENE	0.16
70	39.4	SESQUITERPENE	0.02
71	39.8	HEXYL CAPROATE	0.03
72	40.0	AROMADENDRENE	0.06
73	40.5	HEXYL TIGLATE	0.01
74	40.6	COMPOUND Mw=168	0.01
75	40.7	SESQUITERPENE	0.02
76	41.0	beta-SANTALENE	0.02
77	41.1	GERMACRENE A	0.03
78	41.4	ALLO-AROMADENDRENE	0.08
79	41.5	Trans-PINOCARVEOL	0.06
80	41.6	TERPENIC ESTER	0.02
81	41.8	SESQUITERPENE	0.01
82	42.2	CURCUMENE ISOMER	0.09
83	42.3	ZONARENE	0.08
84	42.7	alpha-HUMULENE	0.18
85	42.8	CURCUMENE ISOMER	0.34
86	43.0	E-beta-FARNESENE	0.32
87	43.2	gamma-SELINENE	1.43
88	43.4	CURCUMENE ISOMER	0.33
89	43.5	4.5-di-epi-ARISTOLOCHENE	0.12
90	43.7	Z-beta-FARNESENE	0.27

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ORGANIC ESSENTIAL OIL - 50067

Peak	RT (min)	Compound name	%
91	44.0	gamma-MUUROLENE	0.44
92	44.4	gamma-CURCUMENE	13.29
93	45.3	EREMOPHILENE	0.29
94	45.5	SESQUITERPENE	0.04
95	45.8	alpha-MUUROLENE	0.45
96	45.8	NERYL ACETATE	9.00
97	46.0	alpha-SELINENE	3.07
98	46.3	beta-SELINENE + beta-BISABOLENE	4.19
99	46.6	Cis-alpha-BISABOLENE	0.02
100	46.8	EUDESMATRIENE ISOMER	0.01
101	47.0	beta-CURCUMENE	0.46
102	47.3	SESQUICINEOLE	0.03
103	47.4	SESQUITERPENE	0.02
104	47.5	ALIPHATIC ESTER	0.01
105	47.9	delta-CADINENE	0.96
106	48.1	gamma-CADINENE	0.30
107	48.3	7-epi-alpha-SELINENE	0.11
108	48.5	ALIPHATIC ESTER	0.01
109	48.9	alpha-CURCUMENE	2.08
110	48.9	Trans-alpha-BISABOLENE	0.07
111	49.2	CADINA-1.4-DIENE	0.04
112	49.3	MYRTENOL	0.02
113	49.5	TERPENIC ESTER	0.07
114	49.7	NERYL PROPIONATE	0.90
115	50.1	NEROL	0.56
116	50.9	2-TRIDECANONE	0.02
117	51.4	ALIPHATIC ALCOHOL	0.02
118	51.7	Cis-CALAMENENE	0.02
119	52.2	Trans-CALAMENENE	0.09
120	52.7	COMPOUND Mw=220	0.06

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ORGANIC ESSENTIAL OIL - 50067

Peak	RT (min)	Compound name	%
121	53.8	COMPOUND Mw=220	0.03
122	53.8	GERANYL BUTYRATE	0.06
123	54.0	NERYL METHYLBUTYRATE	0.09
124	54.7	DEHYDROCURCUMENE Mw=200	0.02
125	55.0	NERYL 2-METHYLBUTYRATE	0.12
126	55.4	ITALIDIONE I Mw=210	5.19
127	55.5	ITALIDIONE II Mw=224	1.96
128	56.7	alpha-CALACORENE	0.06
129	57.5	ALIPHATIC DIONE	0.01
130	57.8	SEQUITERPENIC EPOXIDE	0.02
131	58.8	ITALIDIONE ISOMER	0.18
132	59.0	ITALIDIONE III Mw=238	1.01
133	59.6	AROMATIC COMPOUND	0.03
134	60.2	CARYOPHYLLENE OXIDE	0.06
135	60.5	NERYL ISOVALERATE	0.10
136	60.9	SEQUITERPENIC EPOXIDE	0.01
137	61.7	NERYL METHYLVALERATE	0.05
138	62.7	Epoxy-6.7-HUMULENE	0.02
139	63.0	ALIPHATIC ALCOHOL	0.02
140	63.2	SEQUITERPENIC EPOXIDE	0.02
141	63.3	NEROLIDOL	0.11
142	63.4	CARYOPHYLLENOL	0.01
143	64.1	NERYL CAPROATE	0.12
144	64.3	CUBENOL	0.02
145	64.7	SESQUITERPENOL	0.03
146	64.8	KETONIC COMPOUND	0.02
147	65.4	GERANYL TIGLATE	0.01
148	65.8	GUAIOL	0.11
149	66.0	COMPOUND Mw=235	0.13
150	66.2	2-PHENYETHYL TIGLATE	0.06

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ORGANIC ESSENTIAL OIL - 50067

Peak	RT (min)	Compound name	%
151	66.7	SEQUITERPENIC EPOXIDE	0.01
152	66.8	ALIPHATIC DIONE	0.01
153	66.9	SESQUITERPENOL	0.02
154	67.5	EUDESMA-5-EN-11-alpha-OL	0.32
155	67.6	TERPENIC ESTER	0.01
156	68.2	EUDESMA-7-EN-4-OL	0.13
157	68.5	SESQUITERPENOL	0.03
158	68.6	SEQUITERPENIC EPOXIDE	0.07
159	68.9	SESQUITERPENOL	0.13
160	69.0	SEQUITERPENIC EPOXIDE	0.05
161	69.3	SESQUITERPENOL	0.02
162	69.5	7-epi-beta-EUDES MOL	0.08
163	69.5	gamma-EUDES MOL	0.03
164	69.8	T-CADINOL	0.08
165	70.3	LEVOJUNENOL	0.26
166	70.7	SESQUITERPENOL	0.03
167	70.7	delta-CADINOL	0.03
168	71.2	SESQUITERPENOL	0.01
169	71.3	CADINOL ISOMER	0.04
170	71.4	SEQUITERPENIC EPOXIDE	0.02
171	71.8	SESQUITERPENOL	0.03
172	72.0	alpha-BISABOLOL	0.04
173	72.1	SESQUITERPENOL	0.02
174	72.4	alpha-EUDES MOL	0.05
175	72.7	beta-EUDES MOL + alpha-CADINOL	0.09
176	73.6	KETONIC COMPOUND	0.03
177	73.8	EUDES MOL ISOMERE	0.19
178	74.4	FARNESYL ACETATE	0.02
179	74.5	CAPRIC ACID	0.02
180	75.7	CARYOPHYLLA-3,7-DIEN-6-OL	0.03

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ORGANIC ESSENTIAL OIL - 50067

Peak	RT (min)	Compound name	%
181	76.0	BERGAMOTOL ISOMER	0.01
182	79.4	ALIPHATIC DIONE	0.08
183	80.1	BERGAMOTOL ISOMER	0.01
184	81.7	ALIPHATIC ESTER	0.01
185	82.8	ALIPHATIC DIONE	0.04
186	84.0	ALIPHATIC DIONE	0.04
187	85.4	LAURIC ACID	0.02
188	89.9	ALIPHATIC DIONE	0.01
189	90.0	ALIPHATIC DIONE	0.02
190	92.1	ALIPHATIC DIONE	0.04
191	92.3	ALIPHATIC DIONE	0.04
192	92.5	MYRISTIC ACID	0.01
193	92.9	XANTHORRHIZOL	0.02
		TOTAL	100.00

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