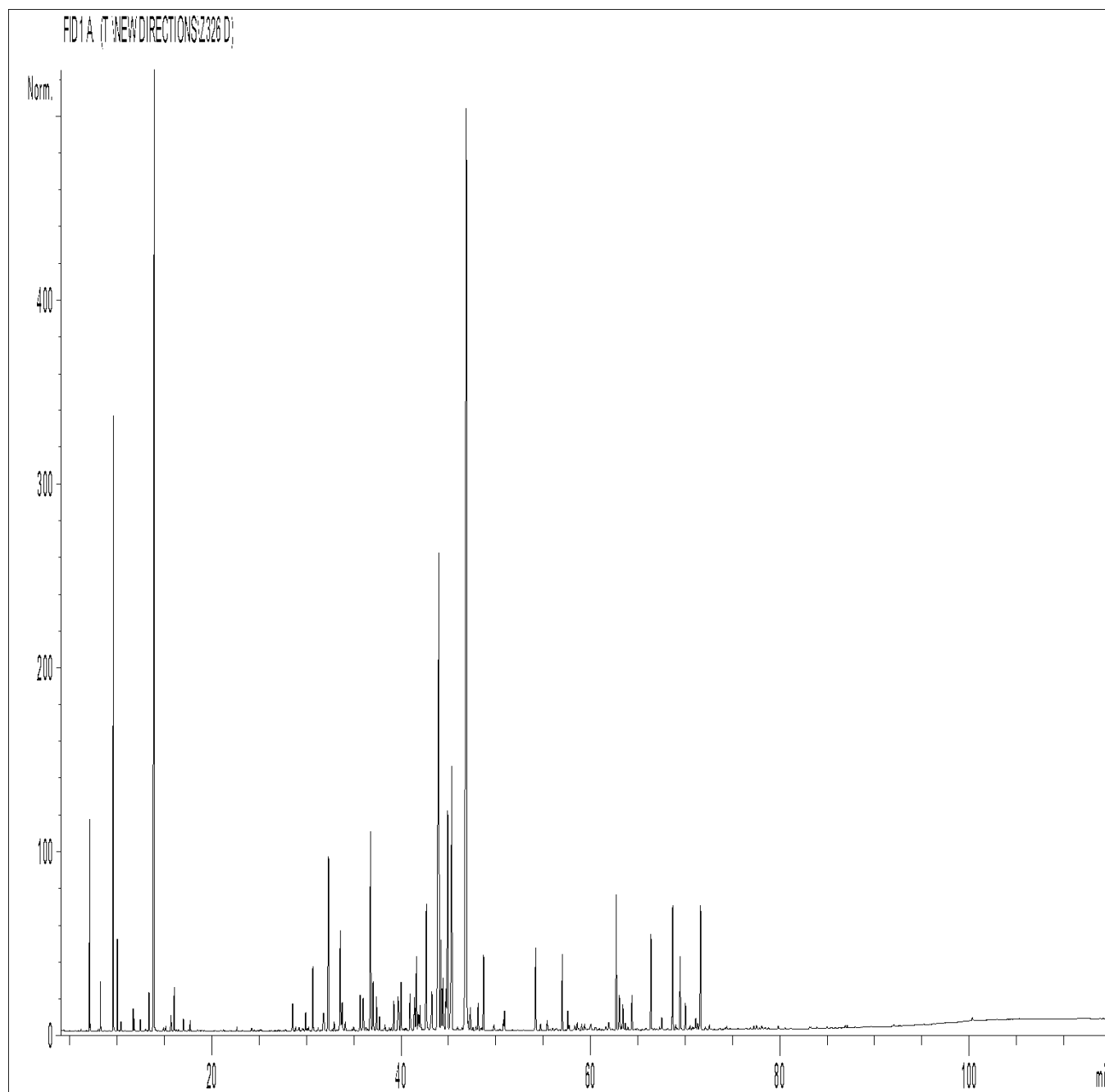


GCMS ANALYSIS

PRODUCT NAME: HELICHRYSUM ESSENTIAL OIL (AFRICA) - 11218

DATE: September 9, 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 ESSENTIAL OIL (AFRICA) - 11218

Peak	RT (min)	Compound name	%
1	7,09	alpha-PINENE	1,16
2	7,16	alpha-THUYENE	0,04
3	8,00	alpha-FENCHENE	0,01
4	8,24	CAMPHENE	0,31
5	9,59	beta-PINENE	4,84
6	10,03	SABINENE	0,64
7	10,40	TERPINOLENE ISOMER	0,07
8	11,68	beta-MYRCENE	0,17
9	11,80	alpha-PHELLANDRENE	0,09
10	12,44	alpha-TERPINENE	0,10
11	13,00	ALIPHATIC ESTER	0,02
12	13,35	LIMONENE	0,36
13	13,92	1,8-CINEOLE	3,09
14	13,93	beta-PHELLANDRENE	11,58
15	14,84	ALIPHATIC ESTER	0,01
16	14,91	FURAN, 2-PENTYL-	0,03
17	15,13	cis-beta-OCIMENE	0,05
18	15,69	gamma-TERPINENE	0,17
19	16,03	trans-beta-OCIMENE	0,39
20	16,26	METHYL 4-METHYL-PENTANOATE	0,01
21	16,48	METHYL 2-ETHYL- HEXANOATE	0,01
22	17,00	p-CYMENE	0,11
23	17,71	TERPINOLENE	0,10
24	18,48	AMYL ISOVALERATE	0,01
25	20,93	5-HEPTEN-2-ONE, 6-METHYL-	0,01
26	22,65	TERPENIC ALCOHOL	0,04
27	24,22	2-METHYLBUTYL ANGELATE	0,03
28	24,48	ISOAMYL ANGELATE	0,01
29	25,20	o-METHYLANISOLE	0,01
30	27,06	MENTHATRIENIC COMPOUND	0,01

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ESSENTIAL OIL (AFRICA) - 11218

Peak	RT (min)	Compound name	%
31	27,81	MENTHATRIENIC COMPOUND	0,02
32	28,55	alpha-CUBEBENE	0,33
33	28,88	trans-THUYANOL	0,05
34	29,11	SESQUITERPENE	0,02
35	29,22	ISOAMYL TIGLATE	0,05
36	29,58	ALIPHATIC ESTER Mw=184	0,03
37	29,68	ALIPHATIC ESTER ISOMER Mw=184	0,02
38	29,92	BICYCLOELEMENE	0,21
39	30,09	YLANGENE	0,03
40	30,24	SESQUITERPENE	0,05
41	30,69	alpha-COPAENE	0,79
42	31,24	ALIPHATIC ESTER	0,04
43	31,57	alpha-PINOCAMPHONE	0,02
44	31,81	alpha-BOURBONENE	0,18
45	31,82	CAMPHOR	0,15
46	31,87	COMPOUND Mw=152	0,09
47	32,33	beta-BOURBONENE	2,46
48	32,72	SESQUITERPENE	0,02
49	32,93	alpha-GURJUNENE	0,11
50	33,18	SESQUITERPENE	0,01
51	33,44	ALIPHATIC ALCOHOL	0,01
52	33,58	beta1-CUBEBENE	1,34
53	33,79	cis-p-MENTH-3-EN-7-AL	0,39
54	34,11	trans-p-MENTH-3-EN-7-AL	0,12
55	34,83	cis-THUYANOL	0,02
56	34,98	LINALOOL	0,04
57	35,02	trans-p-MENTH-2-EN-1-OL	0,02
58	35,68	epsilon-CADINENE	0,45
59	35,99	BORNYL ACETATE	0,51
60	36,28	ELEMENE ISOMER	0,04

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ESSENTIAL OIL (AFRICA) - 11218

Peak	RT (min)	Compound name	%
61	36,34	ALIPHATIC ESTER	0,04
62	36,50	COMPOUND Mw=198	0,02
63	36,78	beta-ELEMENE	2,85
64		beta-CUBEBENE	
65	37,06	beta-CARYOPHYLLENE	0,66
66	37,28	SESQUITERPENE	0,01
67	37,40	TERPINENE-4-OL	0,40
68	37,53	SESQUITERPENE	0,02
69	37,73	AROMADENDRENE	0,18
70	38,31	MUROLADIENE ISOMER	0,08
71	38,77	MYRTENAL	0,04
72	38,98	cis-p-MENTH-2-EN-1-OL	0,03
73	39,23	CADINA-3,5-DIENE	0,38
74	39,68	CADINADIENE ISOMER	0,50
75	39,76	GERMACRENE A	0,19
76	40,00	ALLO-AROMADENDRENE	0,64
77	40,26	ALIPHATIC ESTER	0,02
78	40,41	trans-PINOCARVEOL	0,03
79	40,55	ALIPHATIC ALCOHOL	0,03
80	40,95	ZONARENE	0,50
81	41,04	CRYPTONE	0,02
82	41,42	alpha-HUMULENE	0,48
83	41,63	cis-4,5-MUROLADIENE	1,02
84	41,82	CARVOTANACETONE	0,33
85	42,01	gamma-SELINENE	0,32
86	42,08	4,5-di-epi-ARISTOLOCHENE	0,06
87	42,25	SESQUITERPENE Mw=202	0,02
88	42,68	gamma-MUROLENE	1,91
89	42,80	SESQUITERPENE	0,04
90	42,86	SESQUITERPENE	0,02

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GCMS ANALYSIS (cont'd,)

PRODUCT NAME: HELICHRYSUM ESSENTIAL OIL (AFRICA) - 11218

Peak	RT (min)	Compound name	%
91	43,12	alpha-TERPINEOL	0,06
92	43,20	LEDENE	0,14
93	43,25	BORNEOL	0,53
94	43,36	TERPENIC COMPOUND	0,01
95	43,49	GERANYL FORMIATE	0,02
96	44,01	GERMACRENE D	10,35
97	44,06	MUUROLENE ISOMER	0,06
98	44,23	MUUROLADIENE ISOMER	1,11
99	44,43	beta-SELINENE	0,78
100	44,74	alpha-SELINENE	0,57
101	44,94	alpha-MUUROLENE	3,17
102	45,20	PIPERITONE	0,21
103	45,36	BICYCLOGERMARENE	4,26
104	45,97	SESQUITERPENE	0,04
105	46,44	E,E-alpha-FARNESENE	0,02
106	46,90	delta-CADINENE	19,43
107	47,08	GERANYL ACETATE	0,11
108	47,32	gamma-CADINENE	0,35
109	47,59	SESQUITERPENE	0,04
110	47,94	CUMINAL	0,08
111	48,15	CADINA-1,4-DIENE	0,35
112	48,42	cis-SABINOL	0,03
113	48,52	MYRTENOL	0,04
114	48,73	alpha-AMORPHENE	0,99
115	49,82	2-PHENYLETHYL ACETATE	0,09
116	50,42	beta-DAMASCENONE	0,01
117	50,45	3,5,7-OCTATRIENE-2-OL, E,E-2,6-DIMETHYL-	0,02
118	50,81	cis-CALAMENENE	0,13
119	50,93	trans-CALAMENENE	0,25
120	51,76	p-CYMENE-8-OL	0,01

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ESSENTIAL OIL (AFRICA) - 11218

Peak	RT (min)	Compound name	%
121	54,22	Epi-CUBEBOL	1,01
122	54,74	SABINOL ISOMER	0,09
123	55,45	alpha-CALACORENE	0,16
124	55,72	SESQUITERPENOL	0,02
125	56,03	ALIPHATIC ALCOHOL	0,04
126	56,32	PALUSTROL	0,02
127	56,42	ALIPHATIC ESTER	0,04
128	57,03	CUBEBOL	0,96
129	57,62	SESQUITERPENOL	0,24
130	57,76	beta-CALACORENE	0,06
131	58,35	ISOCARYOPHYLLENE EPOXIDE	0,06
132	58,62	CUBEBOL ISOMER	0,10
133	58,75	ALIPHATIC ESTER	0,03
134	59,09	CARYOPHYLLENE OXIDE	0,09
135	59,39	SESQUITERPENOL	0,09
136	59,49	PHENYLETHYLIC ESTER	0,02
137	60,02	SESQUITERPENIC EPOXIDE	0,06
138	60,06	SESQUITERPENOL	0,10
139	60,49	CHRYSANTHEMOL ISOMER	0,04
140	60,57	CUBEBOL ISOMER	0,05
141	60,80	METHYLEUGENOL	0,02
142	60,96	SESQUITERPENOL	0,03
143	61,64	LEDOL	0,04
144	61,66	CUBEBOL ISOMER	0,04
145	61,93	CITRONELIC ESTER	0,13
146	62,00	EPOXY-6,7-HUMULENE	0,05
147	62,74	GERMACRENE D-4-OL	1,81
148	63,07	Epi-CUBENOL	0,52
149	63,29	COMPOUND Mw=200	0,05
150	63,44	CUBENOL	0,36

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ESSENTIAL OIL (AFRICA) - 11218

Peak	RT (min)	Compound name	%
151	63,68	SESQUITERPENOL	0,10
152	63,97	GLOBULOL	0,05
153	64,21	ALIPHATIC ESTER	0,01
154	64,38	VIRIDIFLOROL	0,46
155	64,67	SESQUITERPENOL	0,01
156	64,89	COMPOUND Mw=168	0,02
157	64,95	AROMATIC COMPOUND Mw=150	0,02
158	65,49	EUDESMOL ISOMER	0,01
159	65,58	VALERANONE ISOMERE	0,01
160	65,88	ALIPHATIC ALCOHOL	0,03
161	66,40	SPATHULENOL	1,24
162	66,76	CADINOL ISOMER	0,03
163	66,95	PENTADECANONE, TRIMETHYL-	0,02
164	67,04	EUDESMOL ISOMER	0,02
165	67,32	AROMATIC COMPOUND Mw=202	0,04
166	67,55	COMPOUND Mw=220	0,17
167	68,13	SESQUITERPENOL	0,02
168	68,17	EUGENOL	0,02
169	68,71	T-CADINOL	1,63
170	69,03	LEVOJUNEOL	0,07
171	69,49	alpha-MUUROLOL	0,95
172	69,62	SESQUITERPENIC EPOXIDE	0,02
173	70,04	delta-CADINOL	0,35
174	70,33	SESQUITERPENIC COMPOUND	0,01
175	70,43	ALIPHATIC ALCOHOL	0,02
176	70,54	CARVACROL	0,06
177	70,79	SESQUITERPENOL	0,04
178	70,94	CADALENE	0,04
179	71,13	CEMBRENE Mw=272	0,17
180	71,33	alpha-NOOTKATOL	0,10

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ESSENTIAL OIL (AFRICA) - 11218

Peak	RT (min)	Compound name	%
181	71,52	SESQUITERPENOL	0,04
182	71,63	alpha-CADINOL	1,68
183	72,14	SESQUITERPENOL	0,04
184	72,58	EUDESMA-7(11)-EN-4-OL	0,06
185	73,58	AROMATIC COMPOUND	0,01
186	73,67	AROMATIC COMPOUND	0,02
187	74,25	SESQUITERPENOL	0,03
188	74,42	AROMATIC COMPOUND	0,05
189	74,54	AROMATIC COMPOUND	0,02
190	74,75	AROMATIC COMPOUND	0,02
191	75,09	SESQUITERPENOL	0,01
192	75,29	AROMATIC COMPOUND	0,02
193	75,62	SESQUITERPENIC EPOXIDE	0,02
194	76,40	ALIPHATIC ALCOHOL	0,01
195	76,49	ALIPHATIC ESTER	0,02
196	76,73	SESQUITERPENOL	0,01
197	76,92	SESQUITERPENIC EPOXIDE	0,03
198	77,28	AROMATIC COMPOUND	0,04
199	77,55	CARYOPHYLLA-2,6-DIEN-5-alpha-OL	0,05
200	77,85	COMPOUND Mw=200	0,02
201	78,12	AROMATIC COMPOUND	0,05
202	78,17	AROMATIC COMPOUND	0,02
203	78,39	AROMATIC COMPOUND	0,02
204	78,50	AROMATIC COMPOUND	0,03
205	79,86	SESQUITERPENIC EPOXIDE	0,05
206	80,60	SESQUITERPENIC EPOXIDE	0,02
207	81,14	SESQUITERPENIC EPOXIDE	0,02
208	83,16	13-HEXYLOXACYCLOTRIDEC-10-EN-2-ONE	0,03
209	83,29	SESQUITERPENOL	0,02
210	83,94	SESQUITERPENIC EPOXIDE	0,02

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: HELICHRYSUM ESSENTIAL OIL (AFRICA) - 11218

Peak	RT (min)	Compound name	%
211	84,99	10-HYDROXYOPOPLANONE	0,03
212	86,92	SESQUITERPENIC EPOXIDE	0,04
213	87,13	SESQUITERPENIC EPOXIDE	0,04
214	89,65	SESQUITERPENIC EPOXIDE	0,02
215	92,05	SESQUITERPENIC EPOXIDE	0,03
216	95,22	SESQUITERPENIC EPOXIDE	0,01
		TOTAL	99,93

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