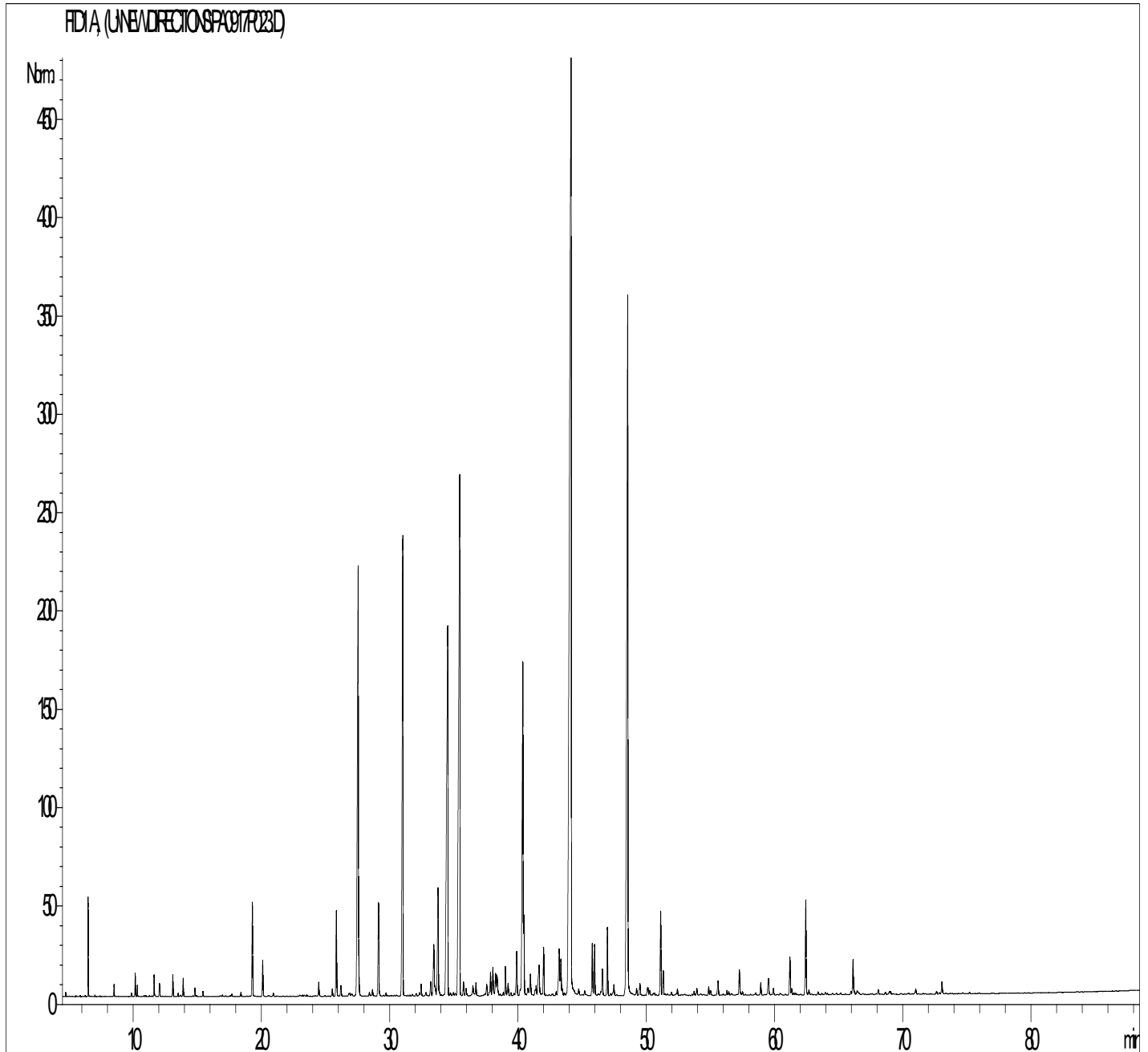




GCMS ANALYSIS

PRODUCT NAME: ROSE GERANIUM (SOUTH AFRICAN) ESSENTIAL OIL - 11244

DATE: May 28, 2018



*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: ROSE GERANIUM (SOUTH AFRICAN) ESSENTIAL OIL - 11244**

Peak	RT (min)	Compound name	%
1	4,7	COMPOUND Mw=124	0,02
2	6,5	alpha-PINENE	0,59
3	7,0	COMPOUND Mw=124	0,01
4	7,4	CAMPHENE	0,01
5	8,4	beta-PINENE	0,01
6	8,5	DEHYDROXILINALOOL OXIDE A	0,09
7	9,9	delta3-CARENE	0,03
8	10,2	beta-MYRCENE	0,17
9	10,3	alpha-PHELLANDRENE	0,09
10	10,8	alpha-TERPINENE	0,01
11	11,3	2,3-DEHYDRO-1,8-CINEOLE	0,01
12	11,6	LIMONENE	0,19
13	12,0	1,8-CINEOLE	0,01
14	12,1	beta-PHELLANDRENE	0,09
15	12,2	Cis-ARBUSCULON	0,04
16	13,1	Cis-beta-OCIMENE	0,18
17	13,5	Trans-ARBUSCULON	0,03
18	13,7	PHENOLIC COMPOUND	0,02
19	13,9	Trans-beta-OCIMENE	0,17
20	14,8	p-CYMENE	0,09
21	15,4	TERPINOLENE	0,05
22	16,9	ETHANONE CYCLOHEXYL	0,03
23	17,2	PINOL	0,02
24	17,7	1-PENTANOL, 3-METHYL	0,02
25	18,4	6-METHYL-5-HEPTEN-2-ONE	0,05
26	19,3	<b>ROSE Cis-OXIDE</b>	<b>0,97</b>
27	20,1	<b>ROSE Trans-OXIDE</b>	<b>0,37</b>
28	20,9	3-HEXEN-1-OL	0,03
29	24,4	LINALOOL Cis-OXIDE	0,15
30	25,5	Trans-THUYANOL	0,09

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**GCMS ANALYSIS (cont'd.)**
**PRODUCT NAME: ROSE GERANIUM (SOUTH AFRICAN) ESSENTIAL OIL - 11244**

Peak	RT (min)	Compound name	%
31	25,8	<b>MENTHONE</b>	<b>0,99</b>
32	26,2	LINALOOL Trans-OXIDE + NERYL OXIDE	0,13
33	26,8	ISOGERANIAL	0,03
34	27,0	CITRONELLAL	0,04
35	27,1	YLANGENE + SESQUITERPENE	0,04
36	27,5	<b>ISOMENTHONE</b>	<b>6,73</b>
37	27,6	alpha-COPAENE	0,29
38	28,4	ISONERAL	0,04
39	28,6	alpha-BOURBONENE	0,08
40	29,1	beta-BOURBONENE	1,20
41	29,7	alpha-GURJUNENE	0,04
42	30,5	SESQUITERPENE	0,03
43	31,0	<b>LINALOOL</b>	<b>6,12</b>
44	31,7	PULEGOL	0,03
45	32,0	DIMETHYL SULFOXIDE + SESQUITERPENE	0,03
46	32,3	ISOPULEGOL	0,04
47	32,4	epsilon-CADINENE	0,15
48	32,8	NEOMENTHYL ACETATE	0,04
49	33,2	alpha-cis-BERGAMOTENE	0,18
50	33,4	alpha-GUAIENE	0,75
51	33,5	Beta-CUBEBENE	0,11
52	33,7	beta-CARYOPHYLLENE	1,59
53	34,5	<b>6,9-GUAIADIENE</b>	<b>7,34</b>
54	34,7	Épi-beta-SANTALENE	0,04
55	35,0	SESQUITERPENE	0,05
56	35,1	THUYOPSENE	0,04
57	35,5	<b>CITRONELLYL FORMIATE</b>	<b>10,24</b>
58	35,7	NEOISOMENTHOL	0,16
59	35,9	CADINA-3,5-DIENE	0,10
60	36,5	GERMACRENE A	0,16

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**GCMS ANALYSIS (cont'd.)**
**PRODUCT NAME: ROSE GERANIUM (SOUTH AFRICAN) ESSENTIAL OIL - 11244**

Peak	RT (min)	Compound name	%
61	36,7	ALLO-AROMADENDRENE	0,16
62	37,4	ALIPHATIC ALCOHOL	0,05
63	37,5	ZONARENE	0,14
64	37,8	CITRONELLYL ACETATE	0,31
65	38,0	alpha-HUMULENE	0,39
66	38,2	NERYL FORMIATE	0,26
67	38,3	CADINADIENE ISOMER	0,33
68	39,0	NERAL	0,35
69	39,2	gamma-MUUROLENE	0,18
70	39,4	SESQUITERPENE	0,04
71	39,7	SESQUITERPENE	0,03
72	39,9	<b>alpha-TERPINEOL</b>	<b>0,59</b>
73	40,2	TERPENIC ACETATE	0,11
74	40,4	<b>GERANYL FORMIATE</b>	<b>4,92</b>
75	40,4	GERMACRENE D	0,73
76	40,7	MUUROLENE ISOMERE	0,10
77	40,8	Alpha-BULNESENE	0,05
78	41,0	EREMOPHILENE	0,33
79	41,1	beta-SELINENE	0,05
80	41,3	alpha-SELINENE + PIPERITONE	0,06
81	41,4	alpha-MUUROLENE	0,13
82	41,6	Beta-BISABOLENE	0,59
83	41,7	NERYL ACETATE	0,03
84	42,0	GERANIAL	0,62
85	42,6	SESQUITERPENE	0,05
86	43,0	alpha-FARNESENE	0,06
87	43,2	GERANYL ACETATE	0,54
88	43,3	delta-CADINENE	0,79
89	43,4	gamma-CADINENE	0,10
90	43,6	delta-SELINENE	0,04

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: ROSE GERANIUM (SOUTH AFRICAN) ESSENTIAL OIL - 11244

Peak	RT (min)	Compound name	%
91	44,1	CITRONELLOL	25,44
92	44,7	CADINA-1,4-DIENE	0,11
93	45,0	MYRTENOL	0,03
94	45,2	ALIPHATIC ESTER	0,10
95	45,7	NEROL	0,63
96	46,0	CITRONELLYL BUTYRATE	0,57
97	46,2	Cis-ISOGERANIOL	0,03
98	46,5	CITRONELLIC ESTER	0,05
99	46,6	NERYL BUTYRATE	0,33
100	47,0	GERANYL PROPIONATE	0,79
101	47,2	CITRONELLIC ESTER + SESQUITERPENE	0,03
102	47,5	CALAMENENE	0,17
103	48,5	<b>GERANIOL</b>	<b>12,60</b>
104	49,2	GERANYL ISOBUTYRATE	0,07
105	49,5	Trans-MYRTANOL	0,15
106	50,1	SESQUITERPENIC EPOXIDE	0,05
107	50,2	2-PHENYLETHYL TIGLATE	0,14
108	50,5	2-PHENYLETHYL VALERATE	0,02
109	50,6	SESQUITERPENIC EPOXIDE	0,02
110	51,1	<b>GERANYL BUTYRATE</b>	<b>1,03</b>
111	51,3	NERYL METHYLBUTYRATE	0,31
112	51,9	$\alpha$ -CALACORENE	0,05
113	62,4	GERANYL ESTER	0,09
114	53,7	SESQUITERPENIC EPOXIDE	0,05
115	53,9	CITRONELLYL ESTER	0,08
116	54,8	FUROPALARGON ISOMER	0,10
117	55,0	PHENYLETHYL VALERATE	0,06
118	55,5	CARYOPHYLLENE OXIDE	0,21
119	56,2	GERANYL ESTER	0,06
120	56,4	CITRONELLIC ISOVALERATE	0,04

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**GCMS ANALYSIS (cont'd.)**
**PRODUCT NAME: ROSE GERANIUM (SOUTH AFRICAN) ESSENTIAL OIL - 11244**

Peak	RT (min)	Compound name	%
121	57,2	CITRONELLYL TIGLATE	0,34
122	57,5	NERYL TIGLATE	0,04
123	58,5	EPOXY-6,7-HUMULENE	0,05
124	58,9	GERANYL ISOVALERATE	0,15
125	59,5	Epi-CUBENOL	0,25
126	59,9	CUBENOL	0,09
127	61,2	FUROPELARGON	0,49
128	61,3	GERANYL CAPROATE	0,07
129	61,5	CITRONELLYL ESTER	0,02
130	62,4	<b>GERANYL TIGLATE</b>	<b>1,21</b>
131	62,6	GERANYL ESTER	0,06
132	63,3	TERPENIC ACETATE	0,04
133	63,9	SESQUITERPENIC EPOXIDE	0,04
134	64,5	CITRONELIC ESTER	0,03
135	64,8	SESQUITERPENIC EPOXIDE	0,04
136	65,1	T-CADINOL	0,03
137	65,9	Alpha-MUUROLOL	0,04
138	66,1	<b>2-PHENYLETHYL TIGLATE</b>	<b>0,45</b>
139	66,2	ALIPHATIC ESTER	0,03
140	66,4	CITRONELLYL ESTER	0,08
141	68,0	$\alpha$ -CADINOL	0,05
142	68,6	CITRONELIC ACID	0,03
143	68,9	NERIC ESTER	0,04
144	69,1	EUDESMA-7(11)-EN-4-OL	0,03
145	71,0	NERIC ESTER	0,07
146	72,6	SESQUITERPENIC EPOXIDE	0,04
147	73,0	GERANIC ACID	0,17
		<b>TOTAL</b>	<b>99,97</b>

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