



NHR ORGANIC OILS
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Certificate of Analysis Sheet & GC
Organic Frankincense Essential Oil
(Boswellia carterii)

Batch Number: 180124-1

Origin: Somaliland

Parameter	Limits	Result
Appearance	Liquid	Complies
Colour	Pale yellow to yellow	Complies
Odour	Resinous, woody, hint of citrus	Complies
Specific Gravity @ 20°C	0.836 – 0.892 g/ml	0.870
Refractive Index @ 20°C	1.452 – 1.482	1.469
Optical Rotation @ 20°C	-20° to +21°	0.1°

Peaks	RT (min)	Compound name	%
1	5.96	TETRAMETHYL-CYCLOPENTENE ISOMER Mw=124	0.03
2	6.88	TERPENE ISOMER	0.01
3	7.95	TERPENE ISOMER	0.03
4	8.37	TRICYCLENE	0.06
5	9.09	alpha-PINENE	54.17
6	9.15	alpha-THUYENE	0.91
7	9.29	TERPENE ISOMER	0.03
8	9.50	TOLUENE	0.09
9	10.35	alpha-FENCHENE	0.02
10	10.58	TERPENE ISOMER	0.02
11	10.72	CAMPHENE	0.82
12	12.88	beta-PINENE	4.27
13	13.70	SABINENE	2.23
14	13.81	PINADIENE	0.95
15	14.22	THUYA-2,4-DIENE	0.03
16	14.62	p-MENTH-2-ENE	0.03
17	15.33	delta3-CARENE	0.43
18	16.38	beta-MYRCENE	5.32
19	16.51	alpha-PHELLANDRENE	
20	16.61	psi-LIMONENE	0.02

21	16.96	o-CYMENE	0.04
22	17.27	alpha-TERPINENE	0.23
23	17.59	TERPENE ISOMER	0.02
24	17.93	1,8-CINEOLE, 2,3-DEHYDRO-	0.07
25	18.23	MENTHATRIENE ISOMER	0.16
26	18.64	LIMONENE	7.96
27	18.85	TERPENE ISOMER	0.01
28	19.09	1,8-CINEOLE	0.66
29		beta-PHELLANDRENE	
30	19.58	1,3,8-p-MENTHATRIENE	0.21
31	21.14	cis-beta-OCIMENE	0.46
32	21.64	gamma-TERPINENE	0.38
33	21.75	TERPENIC COMPOUND	0.04
34	22.23	trans-beta-OCIMENE	0.18
35	23.22	p-CYMENE	2.04
36	23.64	HEXYL ACETATE	0.02
37	24.06	TERPINOLENE	0.13
38	24.74	DIMETHYLSTYRENE ISOMER	0.04
39	25.25	CYMENE ISOMER	0.05
40	26.57	PINOL	0.06
41	26.76	TERPENIC COMPOUND	0.01
42	27.50	COMPOUND Mw=138	0.02
43	28.00	ALIPHATIC ESTER	0.02
44	28.94	COMPOUND Mw=138	0.03
45	29.87	OXIDE COMPOUND	0.01
46	30.25	ALLO-OCIMENE	0.02
47	31.35	MENTHATRIENE ISOMER	0.04
48	31.45	COMPOUND Mw=150	0.01
49	32.20	ALIPHATIC ESTER	0.05
50	32.27	COMPOUND Mw=122	0.07
51	33.00	PERILLENE	0.08
52	33.44	endo-ISOPINOCAMPHONE	0.06
53	33.74	COMPOUND Mw=152	0.02
54	34.04	alpha,p-DIMETHYLSTYRENE	0.15
55	34.24	beta-THUYONE	0.04
56	34.94	ALIPHATIC ESTER	0.01
57	35.68	alpha-CUBEBENE	0.08
58	35.93	SESQUITERPENE	0.01
59	36.14	ALCOHOL COMPOUND	0.02
60	36.36	delta-ELEMENE	0.04
61	36.54	SESQUITERPENE	0.01
62	36.83	OCTYL ACETATE	2.50
63	36.98	SESQUITERPENE	0.01
64	37.15	ISOLEDENE	0.02
65	37.36	alpha-CAMPHOLENAL	0.38
66	37.74	alpha-COPAENE	0.34
67	38.55	CAMPHOR	0.05
68	38.69	PINOCAMPHONE	0.11

69	38.99	COMPOUND Mw=152	0.03
70	39.21	beta-BOURBONENE	0.23
71	39.82	alpha-GURJUNENE	0.04
72	40.09	ALIPHATIC ALCOHOL	0.11
73	40.22	TERPENIC COMPOUND	0.03
74	40.45	SESQUITERPENE	0.07
75	40.87	LINALOOL	0.15
76	41.42	1-OCTANOL	0.40
77	41.64	PINOCARVONE	0.11
78	42.17	NOPINONE	0.04
79	42.41	SESQUITERPENE	0.06
80	42.60	BORNYL ACETATE	0.40
81	42.76	SESQUITERPENE	0.02
82	43.16	alpha-trans-BERGAMOTENE	0.06
83	43.38	beta-ELEMENE	0.48
84	43.67	beta-CARYOPHYLLENE	1.21
85	43.87	TERPINENE-4-OL	0.55
86	44.29	6,9-GUAIADIENE	0.36
87	44.52	HEXYL CAPROATE	0.05
88	45.11	MYRTENAL	0.42
89	45.27	SABINAKETONE	0.04
90	45.67	CADINA-3,5-DIENE	0.05
91	46.05	SESQUITERPENE	0.03
92	46.13	SESQUITERPENE	0.02
93	46.35	GERMACRENE A	0.10
94	46.57	trans-PINOCARVEOL	0.87
95	47.12	trans-p-MENTHA-2,8-DIEN-1-OL	0.47
96	47.64	alpha-HUMULENE	0.41
97	47.91	trans-VERBENOL	0.42
98	48.51	gamma-SELINENE	0.04
99	48.72	gamma-MUUROLENE	0.12
100	48.93	ALIPHATIC ESTER	0.03
101	49.05	alpha-TERPINEOL	0.41
102	49.38	VERBENONE	0.56
103	49.83	GERMACRENE D	0.14
104	50.12	SESQUITERPENE	0.11
105	50.31	SESQUITERPENE	0.20
106	50.54	p-MENTHA-1(7),2-DIEN-8-OL	1.22
107	50.93	CARVONE	0.01
108	51.08	BICYCLOGERMACRENE	0.03
109	51.55	ALCOHOL COMPOUND	0.03
110	51.86	trans-ISOPIPERITENOL	0.02
111	52.30	GERANYL ACETATE	0.12
112	52.32	delta-CADINENE	0.51
113	52.42	gamma-CADINENE	0.20
114	52.58	SESQUITERPENE	0.02
115	52.98	COMPOUND Mw=220	0.01
116	53.37	MENTHADIENOL ISOMER	0.08

117	53.65	CUMINAL	0.06
118	53.81	MYRTENOL ISOMER	0.28
119	54.06	CADINA-1,4-DIENE	0.01
120	54.15	MYRTENOL	0.02
121	54.32	alpha-AMORPHENE	0.02
122	54.57	trans-SABINOL	0.05
123	55.85	AROMATIC COMPOUND	0.02
124	56.03	trans-CARVEOL	0.22
125	56.64	p-CYMENE-8-OL	0.21
126		TOLUENE, 3,5-DIMETHOXY-	
127	57.51	cis-CARVEOL	0.03
128	58.89	AROMATIC COMPOUND	0.01
129	59.00	Epi-CUBEBOL	0.03
130	60.12	alpha-CALACORENE	0.01
131	61.33	alpha-PHELLANDRENE DIMER ISOMER	0.04
132	61.46	CUBEBOL	0.05
133	61.98	beta-CALACORENE	0.01
134	62.63	COMPOUND Mw=234	0.01
135	63.39	CARYOPHYLLENE OXIDE	0.22
136	64.04	PERILLYL ALCOHOL	0.02
137	66.00	EPOXY-6,7-HUMULENE	0.05
138	66.82	Epi-CUBENOL	0.05
139	67.15	CUBENOL	0.03
140	67.79	ELEMOL	0.05
141	67.98	VIRIDIFLOROL	0.11
142	68.24	COMPOUND Mw=234	0.02
143	69.16	EUDESMOL ISOMER	0.03
144	69.72	SPATHULENOL	0.02
145	71.72	T-CADINOL	0.16
146	72.04	5-epi-7-epi-alpha-EUDESMOL	0.03
147	72.43	alpha-MUUROLOL	0.03
148	72.89	CARVACROL	0.01
149	73.21	DITERPENE	0.02
150	73.92	alpha-EUDESMOL	0.02
151	74.25	beta-EUDESMOL	0.05
152	75.37	NEOCEMBRENE	0.05
153	77.01	COMPOUND Mw=168	0.03
154	79.50	VERTICILLA-4,7,11-TRIENE	0.02
155	80.09	SESQUITERPENIC OXIDE	0.02
156	92.94	INCENSYL ACETATE	0.19
157	94.92	CEMBRENOL	0.02
158	97.16	INCENSOL	0.03
		TOTAL	99.96

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