

ANALYSIS Savory Esssential Oil

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Date : July 11, 2017

SAMPLE IDENTIFICATION

Internal code : 17G04-FSE14-1-DM

Customer identification : Savoury, Winter - Albanie - HEL17a081

Type : Essential oil

Source : Safureja montana

Customer : Flowers Shining Everywhere Inc.

ANALYSIS

Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-07-11

Checked and approved by :



Alexis St-Gelais, M. Sc., chimiste 2013-174



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IDENTIFIED COMPOUNDS

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Identification	Column: BPS			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
2-Methylbutyral	0.38	636	0.01				Aliphatic aldehyde
Isovaleral	0.67	675	0.01				Aliphatic aldehyde
Methyl 2-methylbutyrate	1.41	772	0.02	0.03	914	0.91	Aliphatic ester
Methyl isovalerate	1.43	774	0.03	1.87	954	1.07*	Aliphatic ester
2-Methyloctane	2.38	858	0.08				Alkane
cis-Hex-3-en-1-ol	3.24*	867	0.02	0.01	1318	5.03	Aliphatic alcohol
Tricyclene	3.24*	918	0.03	0.02	927	0.96	Monoterpene
Hashishene	3.24*	918	[0.03]	0.80	943	1.03*	Monoterpene
α-Thujene	3.33	924	1.75	[1.87]	954	1.07*	Monoterpene
α-Pinene	3.43	930	1.00	[0.80]	943	1.03*	Monoterpene
Camphene	3.72	947	0.38	0.36	999	1.27	Monoterpene
Sabinene	4.15	972	0.11	0.10	1058	1.75	Monoterpene
β-Pinene	4.21	976	0.25	0.25	1042	1.59	Monoterpene
Myrcene	4.50	993	2.44	2.18	1115	2.29	Monoterpene
Octen-3-ol	4.53	995	1.24	1.37	1393	6.17	Aliphatic alcohol
α-Phellandrene	4.77*	1009	0.39	0.28	1107	2.21	Monoterpene
Δ3-Carene	4.77*	1009	0.39	0.08	1088	2.04	Monoterpene
Octan-3-ol	4.81	1011	0.12	0.11	1343	5.42	Aliphatic alcohol
α-Terpinene	4.97	1019	2.43	2.39	1123	2.38	Monoterpene
para-Cymene	5.18	1031	7.32	7.31	1207	3.46	Monoterpene
Limonene	5.20	1032	0.46	0.38	1140	2.60	Monoterpene
β-Phellandrene	5.23	1034	0.21	0.66	1144	2.65*	Monoterpene
1,8-Cineole	5.25	1035	0.39	[0.66]	1144	2.65*	Monoterp. ether
cis-β-Ocimene	5.37	1041	0.09	17.04	1191	3.26*	Monoterpene
trans-β-Ocimene	5.55	1051	0.13	0.08	1202	3.39	Monoterpene
γ-Terpinene	5.79	1064	17.31	[17.04]	1191	3.26*	Monoterpene
cis-Sabinene hydrate	6.06	1079	0.52	0.53	1401	6.30	Monoterp. alcohol
Terpinolene	6.21*	1088	0.14	0.09	1222	3.65	Monoterpene
Nonen-3-ol	6.21*	1088	[0.14]	0.14	1476	7.80*	Aliphatic alcohol
Linalool	6.70*	1109	0.76	0.71	1487	8.08*	Monoterp. alcohol
trans-Sabinene hydrate	6.70*	1109	[0.76]	[0.14]	1476	7.80*	Monoterp. alcohol
cis-para-Menth-2-en-1-ol	7.22	1129	0.03	[0.71]	1487	8.08*	Monoterp. alcohol
Borneol	8.63	1180	0.98	1.13	1612	11.97*	Monoterp. alcohol
Terpinen-4-ol	8.81	1187	0.60	0.58	1527	9.01*	Monoterp. alcohol
cis-Dihydrocarvone	9.34	1204	0.04	[0.58]	1527	9.01*	Monoterp. ketone
α-Terpineol	9.46	1206	0.20	1.19	1624	12.38*	Monoterp. alcohol
Carvacrol methyl ether	10.98	1240	0.33	0.45	1532	9.12	Monoterp. ether
Carvone	11.77	1258	0.07	[1.19]	1624	12.38*	Monoterp. ketone
Thymol	14.90	1318	0.91	0.90	2104	38.54	Monoterp. alcohol
Carvacrol	15.84	1333	52.05	53.18	2125	39.18	Monoterp. alcohol
α-Copaene	17.77	1362	0.08	0.08	1437	6.90	Sesquiterpene

β -Bourbonene	18.20	1369	0.08	0.13	1456	7.32	Sesquiterpene
Caryacryl acetate	18.42	1372	0.16				Monoterp. ester
β -Caryophyllene	20.70	1405	1.97	2.01	1523	8.90*	Sesquiterpene
β -Copaene	21.59	1416	0.07	[2.01]	1523	8.90*	Sesquiterpene
α -Humulene	23.46	1438	0.06	0.06	1582	10.87	Sesquiterpene
γ -Murolene	25.70*	1465	1.10	[1.13]	1612	11.97*	Sesquiterpene
Germacrene D	25.70*	1465	[1.10]	[1.19]	1624	12.38*	Sesquiterpene
Bicyclogermacrene	26.93	1480	0.19	0.18	1636	12.81	Sesquiterpene
γ -Cadinene	28.75	1502	0.08	0.12	1671	14.53	Sesquiterpene
β -Bisabolene	28.98	1505	1.74	1.75	1663	14.13	Sesquiterpene
δ -Cadinene	29.41*	1511	0.21	0.21	1676	14.77	Sesquiterpene
trans- α -Bisabolene	30.26	1523	0.03	0.05	1695	15.73	Sesquiterpene
Caryophyllene oxide	33.83	1573	0.11	0.10	1856	25.42	Sesquiterp. ether
Spathulenol	33.92	1574	0.08	0.05	2028	35.77	Sesquiterp. alcohol
Total identified			98.81%	98.96%			

* Two or more compounds are coeluting on this column

(oo): Duplicate percentage due to coelutions, not taken account in the identified total

Note: no correction factor was applied

OTHER DATA

Physical aspect : Light yellow liquid

Refractive index : 1.4980 ± 0.0003 (20 °C)

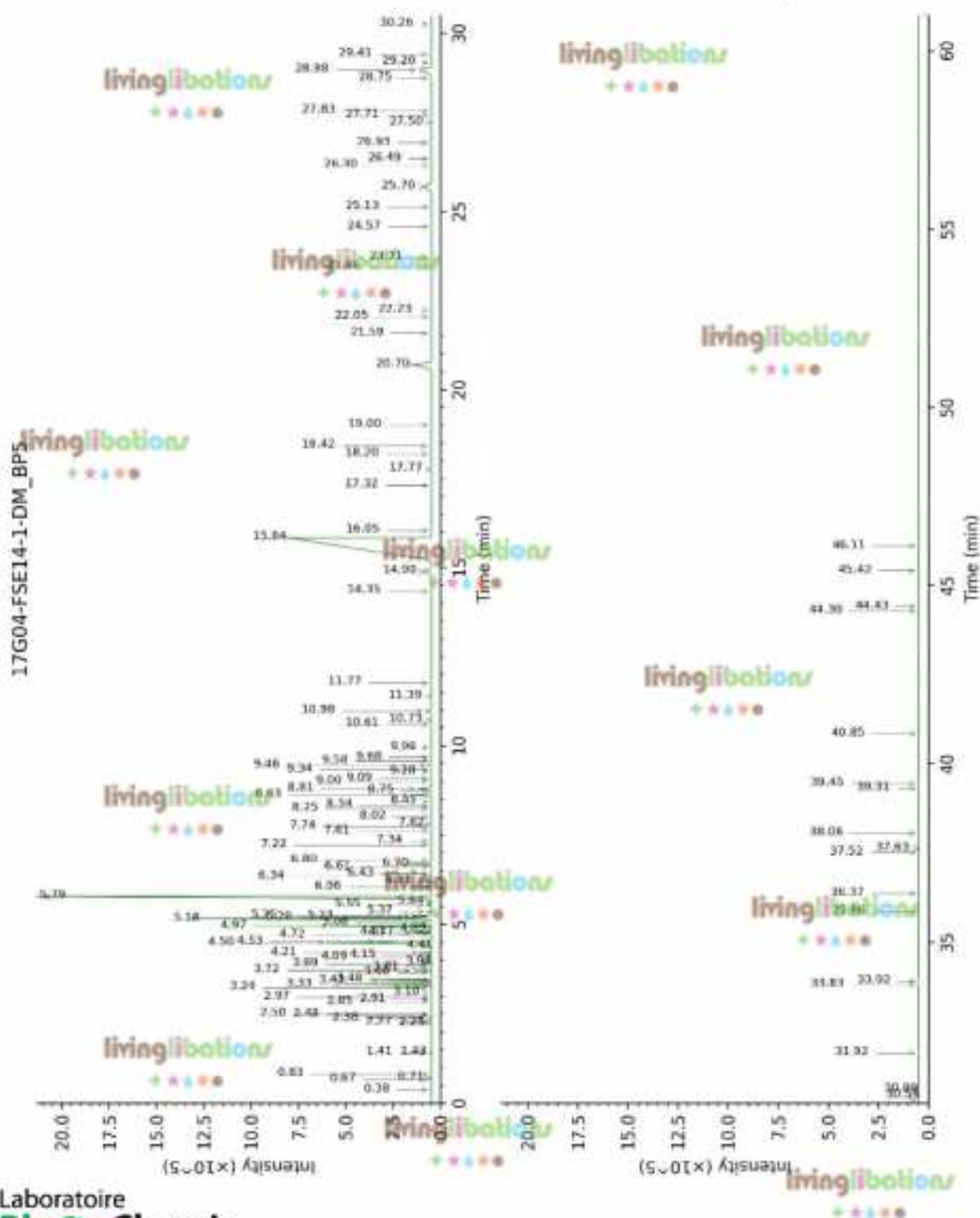
CONCLUSION

No adulterant, contaminant or diluent were detected using this method.

Essential oil, *Sotungia montana*
Internal Code: 17G04-FSE14-1-DM

Customer Identification:
Savoury, Winter - Albanie - HB,17a083

Report prepared for
Flowers Shining Everywhere Inc.



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