

Date : September 20, 2017

SAMPLE IDENTIFICATION

Internal code : 17I07-ORA16-1-DM

Customer identification : Elemi

Type : Essential oil

Source : *Canarium luzonicum*

Customer : Organic Aromas

ANALYSIS

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

Identifications double-checked by GC-MS

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-09-19

Checked and approved by :

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

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IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
α -Thujene	3.31	920	0.09	0.13	949	1.24	Monoterpene
α -Pinene	3.41	926	0.20	0.15	938	1.19	Monoterpene
Sabinene	4.14	969	3.41	3.36	1056	2.04	Monoterpene
β -Pinene	4.20	972	0.14	0.13	1035	1.86	Monoterpene
Myrcene	4.47	989	0.34	6.69	1106	2.55*	Monoterpene
α -Phellandrene	4.77*	1006	6.27	[6.69]	1106	2.55*	Monoterpene
Δ^3 -Carene	4.77*	1006	[6.27]	0.03	1090	2.35	Monoterpene
α -Terpinene	4.94	1015	0.17	52.12	1146	3.07*	Monoterpene
Limonene	5.26*	1032	54.51	[52.12]	1146	3.07*	Monoterpene
1,8-Cineole	5.26*	1032	[54.51]	[52.12]	1146	3.07*	Monoterp. ether
para-Cymene	5.26*	1032	[54.51]	1.94	1209	3.89*	Monoterpene
cis- β -Ocimene	5.36	1038	0.15	0.23	1183	3.59*	Monoterpene
trans- β -Ocimene	5.53	1047	0.17	[1.94]	1209	3.89*	Monoterpene
γ -Terpinene	5.72	1057	0.12	[0.23]	1183	3.59*	Monoterpene
cis-Sabinene hydrate	6.05	1075	0.31	0.35	1401	6.93	Monoterp. alcohol
Terpinolene	6.20	1083	0.28	0.28	1223	4.11	Monoterpene
para-Cymenene	6.41	1095	0.01	0.03	1370	6.36	Monoterpene
Linalool	6.69*	1106	0.09	0.04	1492	9.10	Monoterp. alcohol
trans-Sabinene hydrate	6.69*	1106	[0.09]	0.08	1475	8.70	Monoterp. alcohol
trans-para-Mentha-2,8-dien-1-ol	7.20	1124	0.11	0.08	1549	11.20	Monoterp. alcohol
cis-para-Mentha-2,8-dien-1-ol	7.60	1139	0.07	0.06	1592	12.82	Monoterp. alcohol
Unknown (m/z = 95, 110 (47), 81 (28), 79 (16), 41 (15)... 152 (10))	8.60	1175	0.02				Oxygenated monoterp.
Terpinen-4-ol	8.79	1182	0.21	0.48	1522	10.17*	Monoterp. alcohol
para-Cymen-8-ol	9.18	1196	0.04	0.05	1759	22.47	Monoterp. alcohol
meta-Cymen-8-ol	9.38	1201	0.06	0.06	1775	23.49	Monoterp. alcohol
α -Terpineol	9.51	1204	2.66	2.75	1617	14.05*	Monoterp. alcohol
α -Phellandrene epoxide	9.74	1209	0.21	0.34	1713	19.32*	Monoterpene
trans-Carveol	10.45	1225	0.16	[0.34]	1713	19.32*	Monoterp. alcohol
Carvone	11.39	1246	0.09	0.05	1637	15.13	Monoterp. ketone
Piperitone	11.78	1254	0.10	[2.75]	1617	14.05*	Monoterp. ketone
Unknown (m/z = 111, 126 (90), 43 (86), 71 (50), 109 (32)...))	16.10	1333	0.41	0.66	2095	40.17	
α -Copaene	17.69	1357	0.15	0.12	1427	7.54	Sesquiterpene
β -Elemene	18.92	1375	0.13	[0.48]	1522	10.17*	Sesquiterpene
β -Caryophyllene	20.58	1400	0.15	[0.48]	1522	10.17*	Sesquiterpene
Methyleugenol	21.61	1412	0.38	0.38	1928	33.87	Phenylpropanoid

α-Humulene	23.38	1433	0.09	0.11	1577	12.26	Sesquiterpene
Germacrene D	25.61	1460	0.13	[2.75]	1617	14.05*	Sesquiterpene
δ-Cadinene	29.33	1505	0.07	0.05	1669	16.81	Sesquiterpene
α-Elemol	33.01	1557	18.81	18.90	1989	36.68	Sesquiterp. alcohol
Elemicin	34.06	1572	5.55	5.50	2137	41.32	Phenylpropanoid
Guaiol	35.38	1590	0.29	0.34	1993	36.85	Sesquiterp. alcohol
γ-Eudesmol	36.96	1624	0.20	0.27	2059	39.02	Sesquiterp. alcohol
α-Eudesmol	37.90*	1647	0.87	0.04	2126	41.04	Sesquiterp. alcohol
β-Eudesmol	37.90*	1647	[0.87]	0.75	2101	40.37	Sesquiterp. alcohol
Dimer of α-phellandrene III	42.33	1772	0.10				Diterpene
Cryptomeridiol isomer	42.67	1782	0.02				Sesquiterp. alcohol
Cryptomeridiol	43.71	1818	0.60	0.64	2589	51.20	Sesquiterp. alcohol
Total identified			97.51%	96.53%			

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

Note: no correction factor was applied

OTHER DATA

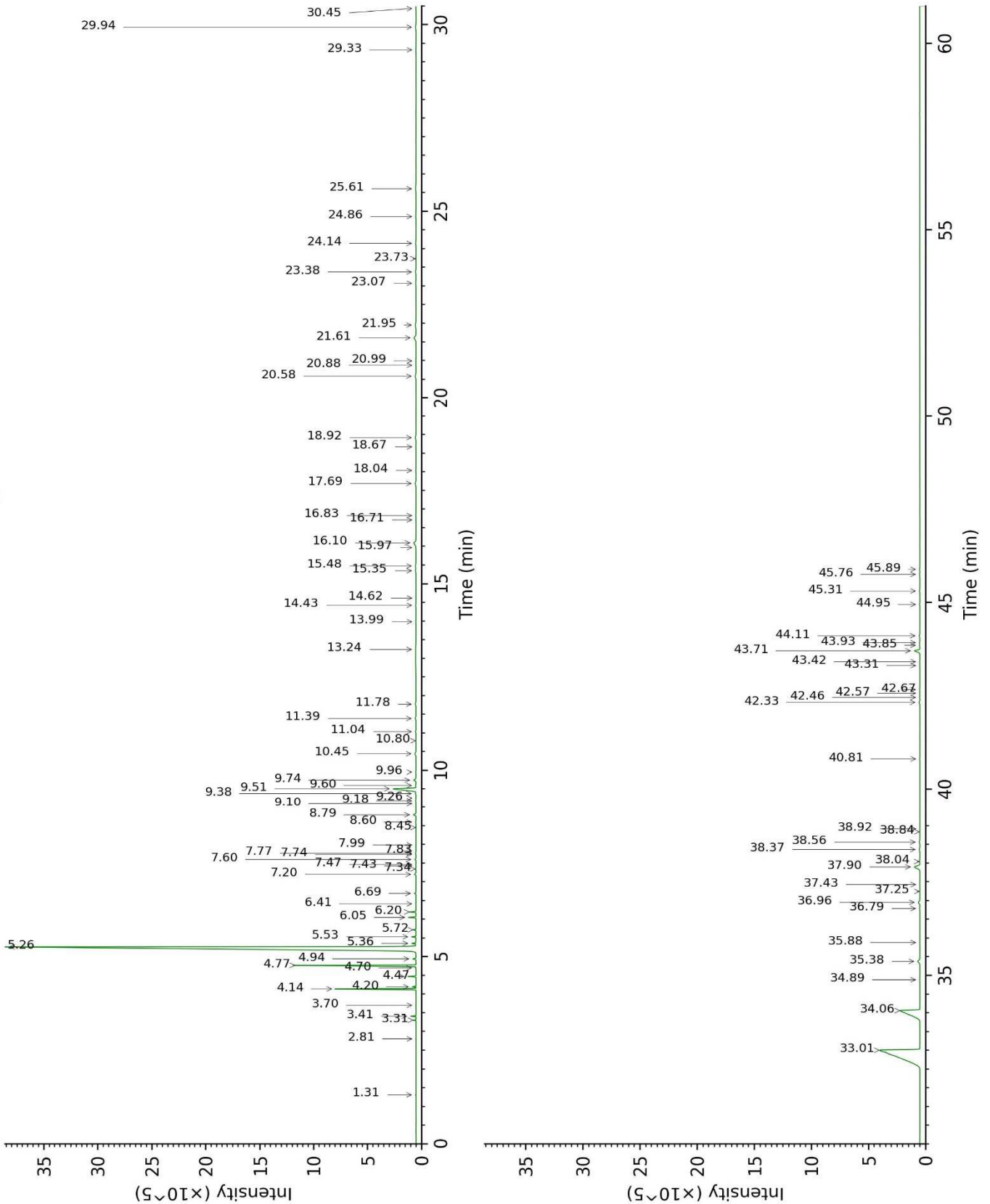
Physical aspect : Yellow liquid

Refractive index : 1.4823 ± 0.0003 (20 °C)

CONCLUSION

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

17107-ORA16-1-DM_BP5



17107-ORA16-1-DM_WAX

