

Date : April 19, 2016

SAMPLE IDENTIFICATION

Internal code : 16C30-NGA9-1-DM

Customer identification : Opopanax - Kenya

Type : Essential oil

Source : *Commiphora guidotti*

Customer : Nature Gifts

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 : Alexis St-Gelais, M. Sc., chimiste

Analysis date : 2016-04-02

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.	
Tricyclene	3.00	915	0.03	0.02	933	0.84	Monoterpene
α -Thujene	3.08	921	0.02	0.05	960	0.95	Monoterpene
α -Pinene	3.18	927	0.42	0.38	953	0.92	Monoterpene
Unknown (m/z = 122, 107 (40), 121 (35), 79 (29), 77 (28))	3.30	934	0.08				Simple phenolic
Camphene	3.39	939	0.01	0.01	1007	1.15	Monoterpene
Sabinene	3.88	969	0.04	0.03	1063	1.59	Monoterpene
β -Pinene	3.94	973	0.09	0.08	1045	1.45	Monoterpene
Myrcene	4.22*	990	0.15	0.13	1120	2.10	Monoterpene
6-Methyl-5-hepten-2-one	4.22*	990	[0.15]	0.03	1284	4.18	Aliphatic ketone
Δ^3 -Carene	4.48	1006	0.09	0.11	1097	1.87	Monoterpene
3-p-Menthene	4.81	1025	0.12	0.11	1112	2.01	Monoterpene
Limonene	4.85	1027	0.05	0.04	1145	2.39	Monoterpene
<i>cis</i> - β -Ocimene	5.08	1040	0.87	0.92	1193	2.96*	Monoterpene
<i>trans</i> - β -Ocimene	5.35	1055	61.82	62.10	1218	3.27	Monoterpene
γ -Terpinene	5.45	1060	0.06	[0.92]	1193	2.96*	Monoterpene
α -Pinene oxide	6.10*	1097	0.24	0.05	1311	4.55	Monoterp. ether
Unknown (m/z = 150, 135 (98), 91 (43), 79 (33), 107 (32), 95 (30))	6.10*	1097	[0.24]				Oxygenated monoterp.
(<i>Z</i>)-6-Methyl-3,5-heptadien-2-one	6.50	1114	0.26				Aliphatic ketone
(<i>E</i>)-6-Methyl-3,5-heptadien-2-one	6.62	1119	0.13				Aliphatic ketone
Limona ketone	7.00	1134	0.62	0.62	1476	7.22*	Simple phenolic
(<i>E</i>)-Epoxyocimene	7.07	1137	0.08				Monoterp. ether
<i>trans</i> -Pinocarveol	7.18	1141	0.10	0.20	1584	10.07*	Monoterp. alcohol
Rosefuran epoxide	7.76	1164	0.02	0.03	1531	8.48	Monoterp. ether
Terpinen-4-ol	8.23	1182	0.08	3.35	1537	8.64*	Monoterp. alcohol
para-Methylacetophenone	8.54	1195	0.09	0.07	1682	13.99	Simple phenolic
α -Terpineol	8.80	1204	0.01	0.94	1629	11.62*	Monoterp. alcohol
(<i>E,Z</i>)-2,6-Dimethyl-3,5,7-octatrien-2-ol?	9.12	1211	0.07				Monoterp. alcohol
(<i>E,E</i>)-2,6-Dimethyl-3,5,7-octatrien-2-ol?	9.45	1219	0.23				Monoterp alcohol
Decanol	12.11	1282	0.50	0.44	1720	15.70	Aliphatic alcohol
α -Longipinene	14.99	1335	0.14				Sesquiterpene
Longicyclene	16.09	1353	0.04	0.21	1431	6.37*	Sesquiterpene
α -Copaene	16.54	1360	0.04	[0.21]	1431	6.37*	Sesquiterpene
Undecanol	17.52	1376	0.08	0.10	1851	23.83*	Aliphatic alcohol

β -Cubebene	17.72	1379	0.17	[0.62]	1476	7.22*	Sesquiterpene
<i>cis</i> - α -Bergamotene	19.43	1405	0.93	8.70	1524	8.25*	Sesquiterpene
α -Santalene	19.79	1410	7.22	[8.70]	1524	8.25*	Sesquiterpene
<i>trans</i> - α -Bergamotene	20.89	1423	3.39	[3.35]	1537	8.64*	Sesquiterpene
Sesquisabinene	21.52	1431	0.07	[0.20]	1584	10.07*	Sesquiterpene
(<i>Z</i>)- <i>epi</i> - β -Santalene	21.78	1434	0.21	0.20	1572	9.70	Sesquiterpene
α -Humulene	21.92	1436	0.06	0.04	1576	9.85	Sesquiterpene
(<i>Z</i>)- β -Santalene	22.64*	1445	0.34	0.27	1586	10.14	Sesquiterpene
9- <i>epi</i> - β -Caryophyllene	22.64*	1445	[0.34]	13.48	1674	13.63*	Sesquiterpene
<i>trans</i> - β -Farnesene	22.74	1446	0.20	0.29	1621	11.25	Sesquiterpene
Germacrene D	24.05	1462	1.04	[0.94]	1629	11.62*	Sesquiterpene
Dodecanol	25.23	1476	0.05				Aliphatic alcohol
α -Muurolene	25.82	1484	0.07	0.11	1633	11.81	Sesquiterpene
Curzerene	26.00	1486	0.23	0.23	1771	18.73	Sesquiterp. ether
<i>cis</i> - α -Bisabolene	27.03	1498	11.28	[13.48]	1674	13.63*	Sesquiterpene
β -Bisabolene	27.33	1502	1.17	[13.48]	1674	13.63*	Sesquiterpene
δ -Cadinene	27.70	1507	0.15	[13.48]	1674	13.63*	Sesquiterpene
Photosantalol	28.18	1513	1.18	1.19	1937	29.73	Sesquiterp. alcohol
<i>trans</i> - γ -Bisabolene	28.38	1516	0.11	0.07	1690	14.39	Sesquiterpene
<i>trans</i> - α -Bisabolene	28.98	1524	0.11	0.07	1703	14.91	Sesquiterpene
Germacrene B	30.24	1540	0.13	0.04	1714	15.45	Sesquiterpene
Spathulenol	32.46*	1569	0.14	0.05	2024	34.93	Sesquiterp. alcohol
Caryophyllene oxide	32.46*	1569	[0.14]	[0.10]	1851	23.83*	Sesquiterp. ether
τ -Cadinol	36.45	1636	0.10	0.12	2077	36.85	Sesquiterp. alcohol
τ -Muurolol	36.72	1642	0.11	0.12	2083	37.06	Sesquiterp. alcohol
α -Cadinol	36.79	1644	0.14	0.13	2131	38.72	Sesquiterp. alcohol
(<i>Z</i>)- α -Santalol	38.01	1672	0.41	0.46	2199	40.54	Sesquiterp alcohol
α -Bisabolol	38.30	1679	0.18	0.10	2142	39.02	Sesquiterp. alcohol
Total identified			95.69%	95.69%			

*: 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 : Light yellow liquid

Refractive index : 1.4880 \pm 0.0003 (20 °C)

CONCLUSION

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



