

Date : September 22, 2017

SAMPLE IDENTIFICATION

Internal code : 17112-NGA7-1-DM

Customer identification : Tea Tree - Batch# AU-PMA030

Type : Essential oil

Source : *Melaleuca alternifolia*

Customer : Nature's Gift Aromatherapy

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 : 2017-09-15

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.	
Ethanol	0.35	631	0.06	0.07	791	0.70	
<i>cis</i> -Hex-3-en-1-ol	2.50	865	0.02	0.03	1320	5.58	Aliphatic alcohol
α -Thujene	3.31	920	0.75	1.36	949	1.24	Monoterpene
α -Pinene	3.42	926	2.42	1.77	938	1.19	Monoterpene
Camphene	3.70	943	0.02	0.01	989	1.49	Monoterpene
Sabinene	4.13	969	0.11	0.12	1055	2.03	Monoterpene
β -Pinene	4.20	972	0.67	0.64	1035	1.86	Monoterpene
Myrcene	4.48	989	0.74	0.59	1112	2.63	Monoterpene
α -Phellandrene	4.75	1005	0.35	0.26	1105	2.54	Monoterpene
α -Terpinene	4.96	1016	7.45	7.61	1121	2.74	Monoterpene
<i>para</i> -Cymene	5.16	1027	5.26	5.26	1210	3.90*	Monoterpene
Limonene	5.18	1028	0.89	4.45	1142	3.02*	Monoterpene
β -Phellandrene	5.21	1030	0.57	[4.45]	1142	3.02*	Monoterpene
1,8-Cineole	5.24	1031	2.82	[4.45]	1142	3.02*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.35	1037	tr	19.10	1193	3.66*	Monoterpene
<i>trans</i> - β -Ocimene	5.53	1047	0.01	[5.26]	1210	3.90*	Monoterpene
γ -Terpinene	5.78	1060	19.21	[19.10]	1193	3.66*	Monoterpene
<i>cis</i> -Sabinene hydrate	6.06	1076	0.03	0.18	1398	6.86*	Monoterp. alcohol
Terpinolene	6.21	1084	3.08	3.08	1224	4.12	Monoterpene
<i>para</i> -Cymenene	6.42	1095	0.09	0.08	1365	6.29	Monoterpene
Linalool	6.70	1106	0.11	0.22	1492	9.11*	Monoterp. alcohol
<i>cis</i> - <i>para</i> -Menth-2-en-1-ol	7.23	1125	0.14	[0.22]	1492	9.11*	Monoterp. alcohol
<i>trans</i> - <i>para</i> -Menth-2-en-1-ol	7.72	1143	0.11	0.18	1550	11.22*	Monoterp. alcohol
Camphor	7.81	1147	0.09	0.20	1428	7.56*	Monoterp. ketone
Terpinen-4-ol	9.04	1191	42.52	43.47	1529	10.44*	Monoterp. alcohol
Myrtenal	9.42	1202	0.18	0.21	1536	10.68	Monoterp. aldehyde
α -Terpineol	9.54	1205	2.87	3.17	1617	14.06*	Monoterp. alcohol
<i>trans</i> -Piperitol	9.99	1215	0.07	1.22	1670	16.84*	Monoterp. alcohol
<i>cis</i> -Ascaridol glycol	11.82	1255	0.05				Monoterp. alcohol
<i>trans</i> -Ascaridol glycol	13.34	1288	0.12				Monoterp. alcohol
Ascaridol glycol analog	14.63	1311	0.08				Monoterp. alcohol
α -Cubebene	16.15	1334	0.14	[0.18]	1398	6.86*	Sesquiterpene
α -Ylangene	17.28	1351	0.08	0.07	1410	7.14	Sesquiterpene
α -Copaene	17.70	1357	0.16	[0.20]	1428	7.56*	Sesquiterpene
α -Gurjunene	19.67	1387	0.34	0.38	1462	8.37	Sesquiterpene
β -Caryophyllene	20.59	1400	0.36	[43.47]	1529	10.44*	Sesquiterpene
Methyleugenol	21.54	1412	0.13	0.43	1947	34.75*	Phenylpropanoid
Aromadendrene	22.01	1417	1.04	1.05	1530	10.47	Sesquiterpene
<i>trans</i> - α -Bergamotene	22.16	1419	0.15	[43.47]	1529	10.44*	Sesquiterpene
Seychellene	22.66	1425	0.13	[0.18]	1550	11.22*	Sesquiterpene
<i>cis</i> -Muurola-3,5-diene	22.98	1429	0.07	0.52	1557	11.50*	Sesquiterpene

<i>cis</i> -Cadinane-1(6),4-diene	23.15	1431	0.02	[0.52]	1557	11.50*	Sesquiterpene
α -Humulene	23.39	1434	0.08	0.28	1579	12.33*	Sesquiterpene
allo-Aromadendrene	23.66	1437	0.55	[0.52]	1557	11.50*	Sesquiterpene
<i>trans</i> -Cadinane-1(6),4-diene	25.06	1453	0.24	[0.28]	1579	12.33*	Sesquiterpene
α -Amorphene	26.05	1465	0.09	1.03	1610	13.68*	Sesquiterpene
β -Selinene	26.23	1467	0.10	[3.17]	1617	14.06*	Sesquiterpene
Viridiflorene	26.46	1470	0.95	[1.03]	1610	13.68*	Sesquiterpene
Bicyclgermacrene	26.86*	1475	0.35	0.39	1635	15.02*	Sesquiterpene
α -Selinene	26.86*	1475	[0.35]	0.11	1627	14.58	Sesquiterpene
α -Muurolene	27.63	1484	0.18	[0.39]	1635	15.02*	Sesquiterpene
γ -Cadinene	28.71	1497	0.05	0.25	1663	16.50*	Sesquiterpene
δ -Cadinene	29.37	1506	1.01	[1.22]	1670	16.84*	Sesquiterpene
Zonarene	29.54	1508	0.24	[0.25]	1663	16.50*	Sesquiterpene
<i>trans</i> -Calamenene	29.73	1511	0.15	0.14	1728	20.37	Sesquiterpene
<i>trans</i> -Cadinane-1,4-diene	30.48	1522	0.17	0.17	1686	17.71	Sesquiterpene
α -Elemol	32.89	1555	0.06	0.04	1990	36.69	Sesquiterp. alcohol
Spathulenol	33.96	1570	0.12	0.10	2008	37.42	Sesquiterp. alcohol
Globulol	34.34	1576	0.25	0.27	1960	35.34	Sesquiterp. alcohol
Viridiflorol	34.83	1583	0.15	0.19	1969	35.75	Sesquiterp. alcohol
Cubeban-11-ol	35.00	1585	0.10	[0.43]	1947	34.75*	Sesquiterp. alcohol
1,10-diepi-Cubenol	36.42	1610	0.11	0.10	1905	32.80	Sesquiterp. alcohol
1-epi-Cubenol	36.63	1615	0.14	[0.43]	1947	34.75*	Sesquiterp. alcohol
Cubenol	37.04	1626	0.07	[0.43]	1947	34.75*	Sesquiterp. alcohol
τ -Muurolol	37.63	1640	0.01	0.03	2091	40.04	Sesquiterp. alcohol
α -Cadinol	37.82	1645	0.03	0.03	2140	41.41	Sesquiterp. alcohol
Total identified			98.63%	98.86%			

*: 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 : Clear liquid

Refractive index : 1.4770 \pm 0.0003 (20 °C)

CONCLUSION

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

17112-NGA7-1-DM_BP5



