

GC/MS BATCH NUMBER: T30104

ESSENTIAL OIL: TEA TREE ORGANIC
BOTANICAL NAME: MELALEUCA ALTERNIFOLIA
ORIGIN: AUSTRALIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF TEA TREE ORGANIC OIL	%
TERPINEN-4-OL	41.7
γ-TERPINENE	21.3
α-TERPINENE	9.6
TERPINOLENE	3.4
p-CYMENE	3.1
α-TERPINEOL	3.1
1,8-CINEOLE	3.0
α-PINENE	2.7
LIMONENE	0.9
AROMADENDRENE	0.9
VIRIDIFLORENE	0.7
δ-CADINENE	0.7
GLOBULOL	0.2
SABINENE	0.1
VIRIDIFLOROL	0.1

Comments from Robert Tisserand: Excellent light, fresh green odor quality. All 15 key ISO constituents are within range.

Date : September 9, 2016

SAMPLE IDENTIFICATION

Internal code : 16I06-PTH2-1-DM

Customer identification : Organic Tea Tree - T3010458R

Type : Essential oil

Source : *Melaleuca alternifolia*

Customer : Plant Therapy

ANALYSIS

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

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

Analysis date : 2016-09-07

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	0.33	496	0.11	0.11	800	0.52	Aliphatic alcohol
<i>cis</i> -Hex-3-en-1-ol	2.50	865	0.03	0.03	1321	4.62	Aliphatic alcohol
α -Thujene	3.25	918	0.94	1.11	954	0.90	Monoterpene
α -Pinene	3.36	925	2.65	2.44	947	0.87	Monoterpene
Camphene	3.64	942	0.01	0.01	998	1.08	Monoterpene
Sabinene	4.07	968	0.12	0.12	1056	1.50	Monoterpene
β -Pinene	4.13	971	0.74	0.72	1039	1.36	Monoterpene
Myrcene	4.42	989	0.90	0.84	1115	1.98	Monoterpene
α -Phellandrene	4.69	1004	0.39	0.35	1108	1.92	Monoterpene
α -Terpinene	4.90	1016	9.57	9.60	1125	2.10	Monoterpene
<i>para</i> -Cymene	5.08	1026	3.13	3.10	1209	3.07*	Monoterpene
Limonene	5.11	1028	0.91	0.80	1140	2.28	Monoterpene
β -Phellandrene	5.14	1030	0.67	3.80	1146	2.34*	Monoterpene
1,8-Cineole	5.17	1031	2.98	[3.80]	1146	2.34*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.29	1038	0.01	21.59	1194	2.90*	Monoterpene
<i>trans</i> - β -Ocimene	5.47	1048	0.01	[3.10]	1209	3.07*	Monoterpene
γ -Terpinene	5.71	1061	21.33	[21.59]	1194	2.90*	Monoterpene
<i>cis</i> -Sabinene hydrate	6.02	1077	0.02	0.01	1408	5.87*	Monoterp. alcohol
Terpinolene	6.14	1084	3.36	3.36	1225	3.29	Monoterpene
<i>para</i> -Cymenene	6.34	1095	0.07	0.06	1368	5.30	Monoterpene
Linalool	6.65	1107	0.10	0.27	1492	7.41*	Monoterp. alcohol
<i>cis</i> - <i>para</i> -Menth-2-en-1-ol	7.16	1126	0.19	[0.27]	1492	7.41*	Monoterp. alcohol
<i>trans</i> - <i>para</i> -Menth-2-en-1-ol	7.68	1146	0.04	0.35	1567	9.30*	Monoterp. alcohol
Terpinen-4-ol	8.92	1192	41.67	43.90	1538	8.43*	Monoterp. alcohol
α -Terpineol	9.44	1205	3.08	3.26	1628	11.18	Monoterp. alcohol
<i>trans</i> -Piperitol	9.91	1216	0.08	0.12	1675	13.22*	Monoterp. alcohol
α -Cubebene	15.71	1329	0.03	[0.01]	1408	5.87*	Sesquiterpene
α -Copaene	17.40	1355	0.11	0.08	1440	6.44	Sesquiterpene
β -Elemene	18.39	1371	0.02	[43.90]	1538	8.43*	Sesquiterpene
α -Gurjunene	19.34	1385	0.24	0.17	1469	6.97	Sesquiterpene
β -Caryophyllene	20.25	1398	0.23	[43.90]	1538	8.43*	Sesquiterpene
Aromadendrene	21.64	1415	0.86	[43.90]	1538	8.43*	Sesquiterpene
<i>trans</i> - α -Bergamotene	21.79	1417	0.11	[43.90]	1538	8.43*	Sesquiterpene
<i>cis</i> -Muurola-3,5-diene	22.30	1423	0.10	0.15	1556	9.01*	Sesquiterpene
<i>cis</i> -Cadina-1(6),4-diene	22.62	1427	0.06	[0.15]	1556	9.01*	Sesquiterpene
α -Humulene	23.02	1432	0.05	0.18	1588	9.94*	Sesquiterpene
allo-Aromadendrene	23.27	1435	0.38	[0.35]	1567	9.30*	Sesquiterpene
<i>trans</i> -Cadina-1(6),4-diene	24.68	1452	0.18	[0.18]	1588	9.94*	Sesquiterpene
β -Selinene	25.83	1466	0.07	0.09	1633	11.40	Sesquiterpene
Viridiflorene	26.04	1468	0.74	0.41	1624	11.02	Sesquiterpene
Bicyclogermacrene	26.47*	1472	0.51	0.35	1648	12.04	Sesquiterpene

α -Selinene	26.47*	1472	[0.51]	0.03	1641	11.70	Sesquiterpene
α -Muurolene	27.23	1482	0.10	0.12	1651	12.18	Sesquiterpene
γ -Cadinene	28.29	1495	0.03	0.06	1669	12.94	Sesquiterpene
δ -Cadinene	28.95	1504	0.69	0.67	1679	13.43	Sesquiterpene
Zonarene	29.12	1506	0.14	[0.12]	1675	13.22*	Sesquiterpene
<i>trans</i> -Calamenene	29.32	1509	0.09	0.07	1742	16.31	Sesquiterpene
<i>trans</i> -Cadina-1,4-diene	30.06	1519	0.11	0.12	1698	14.26	Sesquiterpene
Spathulenol	33.74	1569	0.06	0.07	2029	34.09	Sesquiterp. alcohol
Globulol	34.11	1574	0.24	0.21	1979	31.18	Sesquiterp. alcohol
Viridiflorol	34.61	1581	0.12	0.13	1988	31.68	Sesquiterp. alcohol
Guaiol	34.76	1583	0.08	0.10	2020	33.59	Sesquiterp. alcohol
1,10-diepi-Cubenol	36.23	1610	0.10	0.17	1961	30.12*	Sesquiterp. alcohol
1-epi-Cubenol	36.42	1615	0.11	[0.17]	1961	30.12*	Sesquiterp. alcohol
Total identified			98.67%	99.13%			

*: 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 : 1.4750 ± 0.0003 (20 °C)

CONCLUSION

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

