



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: T20106

ESSENTIAL OIL: TEA TREE

BOTANICAL NAME: MELALEUCA ALTERNIFOLIA

ORIGIN: AUSTRALIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF TEA TREE OIL	%
TERPINEN-4-OL	41.7
α -TERPINENE	10.3
α -TERPINEOL	3.3
α -PINENE	2.6
p-CYMENE	2.0

Comments from Robert Tisserand: Characteristic clean, fresh, slightly metallic odor quality. All fifteen ISO standards are within range.

Date : November 8, 2017

SAMPLE IDENTIFICATION

Internal code : 17K06-PTH1-1-CC

Customer identification : Tea Tree - Australia - T2010668R

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).

Identifications double-checked by GC-MS

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-11-08

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	0.70	678	0.03	0.04	775	0.68	Aliphatic alcohol
Isobutyric acid	1.60	796	0.03				Aliphatic acid
<i>cis</i> -Hex-3-en-1-ol	2.49	865	0.03	0.02	1320	5.45	Aliphatic alcohol
α -Thujene	3.31	920	0.96	1.71	959	1.20	Monoterpene
α -Pinene	3.42	927	2.56	1.71	949	1.15	Monoterpene
Sabinene	4.13	969	0.27	0.28	1054	1.97	Monoterpene
β -Pinene	4.20	972	0.73	0.67	1038	1.80	Monoterpene
Myrcene	4.47	989	0.95	0.77	1116	2.56	Monoterpene
α -Phellandrene	4.75	1005	0.43	0.26	1109	2.47	Monoterpene
α -Terpinene	4.97	1016	10.29	10.48	1124	2.67	Monoterpene
para-Cymene	5.14	1026	2.01	2.02	1209	3.79*	Monoterpene
Limonene	5.17	1028	0.86	3.95	1145	2.94*	Monoterpene
β -Phellandrene	5.21	1029	0.61	[3.95]	1145	2.94*	Monoterpene
1,8-Cineole	5.23	1031	2.36	[3.95]	1145	2.94*	Monoterp. ether
<i>trans</i> - β -Ocimene	5.53	1047	0.02	[2.02]	1209	3.79*	Monoterpene
γ -Terpinene	5.77	1060	20.97	20.91	1194	3.58	Monoterpene
<i>cis</i> -Sabinene hydrate	6.06	1076	0.06	0.07	1403	6.76	Monoterp. alcohol
Terpinolene	6.21	1084	3.57	3.54	1225	4.03	Monoterpene
para-Cymenene	6.41	1095	0.04	0.04	1365	6.16	Monoterpene
Linalool	6.69*	1106	0.16	0.31	1492	8.86*	Monoterp. alcohol
<i>trans</i> -Sabinene hydrate	6.69*	1106	[0.16]	0.11	1476	8.50	Monoterp. alcohol
<i>cis</i> -para-Menth-2-en-1-ol	7.22	1125	0.25	[0.31]	1492	8.86*	Monoterp. alcohol
<i>trans</i> -Pinocarveol	7.54	1137	0.02	0.02	1573	11.70	Monoterp. alcohol
<i>trans</i> -para-Menth-2-en-1-ol	7.81	1147	0.14	0.24	1552	10.91*	Monoterp. alcohol
Terpinen-4-ol	9.04	1191	41.65	42.26	1531	10.17*	Monoterp. alcohol
para-Cymen-8-ol	9.42	1202	0.09	0.04	1760	21.71	Monoterp. alcohol
α -Terpineol	9.55	1205	3.28	3.79	1620	13.66*	Monoterp. alcohol
<i>trans</i> -Piperitol	9.98	1215	0.12	0.10	1664	15.97	Monoterp. alcohol
α -Cubebene	15.95	1331	0.02	0.02	1409	6.92	Sesquiterpene
α -Ylangene	17.26	1350	0.05	0.05	1414	7.04	Sesquiterpene
α -Copaene	17.68	1357	0.11	0.12	1432	7.47	Sesquiterpene
β -Elemene	18.90	1375	0.02	[42.26]	1531	10.17*	Sesquiterpene
α -Gurjunene	19.64	1386	0.24	0.26	1465	8.24	Sesquiterpene
β -Caryophyllene	20.56	1400	0.23	[42.26]	1531	10.17*	Sesquiterpene
Aromadendrene	21.98	1417	0.82	1.06	1533	10.21*	Sesquiterpene
<i>trans</i> - α -Bergamotene	22.13	1418	0.10	[1.06]	1533	10.21*	Sesquiterpene
Seychellene	22.64	1425	0.10	0.16	1538	10.40	Sesquiterpene
<i>cis</i> -Muurolo-3,5-diene	22.96	1428	0.07	[0.24]	1552	10.91*	Sesquiterpene
<i>cis</i> -Cadina-1(6),4-diene	23.13	1430	0.02	[0.24]	1552	10.91*	Sesquiterpene
α -Humulene	23.37	1433	0.06	0.23	1584	12.08*	Sesquiterpene
allo-Aromadendrene	23.64	1436	0.42	0.41	1560	11.24	Sesquiterpene

<i>trans</i> -Cadinane-1(6),4-diene	25.03	1453	0.22	[0.23]	1584	12.08*	Sesquiterpene
α -Amorphene	26.03	1465	0.08	0.10	1608	13.04	Sesquiterpene
Viridiflorene	26.44*	1470	0.91	0.50	1615	13.42	Sesquiterpene
β -Selinene	26.44*	1470	[0.91]	[3.79]	1620	13.66*	Sesquiterpene
Bicyclgermacrene	26.85*	1475	0.60	0.62	1640	14.68*	Sesquiterpene
α -Selinene	26.85*	1475	[0.60]	0.07	1632	14.25	Sesquiterpene
α -Muurolene	27.62	1484	0.10	[0.62]	1640	14.68*	Sesquiterpene
γ -Cadinene	28.68	1497	0.03	0.16	1668	16.18*	Sesquiterpene
δ -Cadinene	29.34	1506	0.81	0.89	1674	16.46	Sesquiterpene
Zonarene	29.52	1508	0.17	[0.16]	1668	16.18*	Sesquiterpene
<i>trans</i> -Calamenene	29.71	1511	0.07	0.06	1734	19.92	Sesquiterpene
<i>trans</i> -Cadinane-1,4-diene	30.48	1522	0.13	0.13	1691	17.33	Sesquiterpene
α -Elemol	32.90	1556	0.06	0.05	2000	36.50	Sesquiterp. alcohol
Spathulenol	33.97	1571	0.05	0.06	2013	37.06	Sesquiterp. alcohol
Globulol	34.34	1576	0.28	0.30	1966	34.95	Sesquiterp. alcohol
Viridiflorol	34.83	1583	0.17	0.16	1975	35.35	Sesquiterp. alcohol
Cubeban-11-ol	35.00	1585	0.11	0.33	1951	34.30*	Sesquiterp. alcohol
1,10-diepi-Cubenol	36.42	1610	0.12	[0.33]	1951	34.30*	Sesquiterp. alcohol
1-epi-Cubenol	36.62	1615	0.14	[0.33]	1951	34.30*	Sesquiterp. alcohol
Cubenol	37.23	1630	0.06	[0.33]	1951	34.30*	Sesquiterp. alcohol
τ -Muurolol	37.75	1643	0.03	0.02	2096	39.74	Sesquiterp. alcohol
Total identified			98.89%	99.10%			

*: 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 : 1.4775 \pm 0.0003 (20 °C)

CONCLUSION

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

17K06-PTH1-1-CC_BP5



