



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: T20104

ESSENTIAL OIL: TEA TREE

BOTANICAL NAME: MELALEUCA ALTERNIFOLIA

ORIGIN: AUSTRALIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF TEA TREE OIL	%
TERPINEN-4-OL	43.6
γ-TERPINENE	19.8
α-TERPINENE	9.3
α-TERPINEOL	3.5
TERPINOLENE	3.3
α-PINENE	2.5
p-CYMENE	2.4
1,8-CINEOLE	1.6
VIRIDIFLORENE	1.1

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

Date : February 2, 2017

SAMPLE IDENTIFICATION

Internal code : 17A23-PTH15-1-DM

Customer identification : Tea tree - Australia - T2010464R

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 : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-01-30

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	0.42	648	0.02	0.02	788	0.68	Aliphatic alcohol
<i>cis</i> -Hex-3-en-1-ol	2.48	869	0.04	0.06	1328	5.79	Aliphatic alcohol
α -Thujene	3.24	921	0.72	0.80	956	1.29	Monoterpene
α -Pinene	3.34	928	2.50	2.45	946	1.25	Monoterpene
α -Fenchene	3.60	944	0.01	0.01	993	1.55	Monoterpene
Camphene	3.63	945	0.02	0.02	1001	1.62	Monoterpene
Sabinene	4.06	972	0.12	0.13	1065	2.11	Monoterpene
β -Pinene	4.12	976	0.58	0.58	1043	1.93	Monoterpene
Myrcene	4.40	994	0.76	0.72	1118	2.71	Monoterpene
α -Phellandrene	4.67*	1007	0.38	0.37	1112	2.62	Monoterpene
Δ 3-Carene	4.67*	1007	[0.38]	0.10	1091	2.30	Monoterpene
α -Terpinene	4.89	1018	9.25	9.35	1128	2.84	Monoterpene
<i>para</i> -Cymene	5.07	1028	2.39	2.40	1213	4.00	Monoterpene
Limonene	5.09	1029	0.73	0.84	1143	3.04	Monoterpene
β -Phellandrene	5.12	1031	0.61	2.33	1150	3.13*	Monoterpene
1,8-Cineole	5.15	1032	1.60	[2.33]	1150	3.13*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.27	1038	0.01	20.10	1197	3.76*	Monoterpene
<i>trans</i> - β -Ocimene	5.45	1048	0.04	0.03	1205	3.88	Monoterpene
γ -Terpinene	5.69	1060	19.82	[20.10]	1197	3.76*	Monoterpene
<i>cis</i> -Sabinene hydrate	6.01	1077	0.03	0.03	1406	7.16	Monoterp. alcohol
Terpinolene	6.13	1083	3.30	3.22	1227	4.22	Monoterpene
<i>para</i> -Cymenene	6.33	1093	0.07	0.07	1369	6.43	Monoterpene
Linalool	6.64	1106	0.13	0.36	1498	9.46*	Monoterp. alcohol
<i>cis</i> - <i>para</i> -Menth-2-en-1-ol	7.15	1124	0.23	[0.36]	1498	9.46*	Monoterp. alcohol
<i>trans</i> -Pinocarveol	7.21	1127	0.02	0.03	1569	12.19	Monoterp. alcohol
<i>cis</i> - <i>para</i> -Mentha-2,8-dien-1-ol	7.55	1139	0.04	0.05	1603	13.63	Monoterp. alcohol
Camphor	7.67	1144	0.05	0.04	1424	7.60	Monoterp. ketone
<i>trans</i> - <i>para</i> -Menth-2-en-1-ol	7.73	1146	0.13	0.63	1557	11.73*	Monoterp. alcohol
Terpinen-4-ol	8.92	1190	43.57	45.00	1534	10.84*	Monoterp. alcohol
<i>para</i> -Cymen-8-ol	9.32	1201	0.04	0.03	1767	23.46	Monoterp. alcohol
α -Terpineol	9.44	1204	3.46	3.39	1623	14.73*	Monoterp. alcohol
<i>trans</i> -Piperitol	9.90	1214	0.08	0.96	1669	17.14*	Monoterp. alcohol
α -Cubebene	15.66	1328	0.03	0.04	1409	7.23	Sesquiterpene
α -Copaene	17.35	1354	0.12	0.07	1427	7.67	Sesquiterpene
β -Elemene	18.57	1371	0.01	[45.00]	1534	10.84*	Sesquiterpene
α -Gurjunene	19.29	1382	0.31	0.30	1460	8.49	Sesquiterpene
β -Caryophyllene	20.20	1396	0.25	0.25	1517	10.21	Sesquiterpene
Aromadendrene	21.60	1413	0.96	[45.00]	1534	10.84*	Sesquiterpene
Methyleugenol	21.74	1415	0.12	0.08	1910	33.41	Phenylpropanoid
<i>trans</i> - α -Bergamotene	22.24	1421	0.10	[45.00]	1534	10.84*	Sesquiterpene

Seychellene	22.57	1424	0.09	0.08	1548	11.39	Sesquiterpene
<i>cis</i> -Muuroala-3,5-diene	22.76	1427	0.02	0.01	1562	11.93	Sesquiterpene
α -Humulene	22.98	1429	0.06	0.04	1571	12.27	Sesquiterpene
<i>cis</i> -Cadinane-1(6),4-diene	23.22	1432	0.46	[0.63]	1557	11.73*	Sesquiterpene
<i>trans</i> -Cadinane-1(6),4-diene	24.63	1449	0.25	0.28	1579	12.57	Sesquiterpene
α -Amorphene	25.61	1461	0.11	0.11	1619	14.49	Sesquiterpene
β -Selinene	25.78	1463	0.11	[3.39]	1623	14.73*	Sesquiterpene
Viridiflorene	26.01	1466	1.06	0.92	1608	13.94	Sesquiterpene
Bicyclogermacrene	26.42*	1471	0.67	0.55	1636	15.36	Sesquiterpene
α -Selinene	26.42*	1471	[0.67]	0.14	1626	14.88	Sesquiterpene
α -Muurolene	27.18	1480	0.14	0.12	1639	15.52	Sesquiterpene
δ -Cadinene	28.91	1501	0.97	[0.96]	1669	17.14*	Sesquiterpene
Zonarene	29.07	1504	0.21	0.22	1663	16.82	Sesquiterpene
<i>trans</i> -Calamene	29.27	1507	0.09	0.12	1727	20.77	Sesquiterpene
<i>trans</i> -Cadinane-1,4-diene	30.01	1517	0.15	0.15	1685	18.03	Sesquiterpene
α -Elemol	32.60	1552	0.08	0.09	1992	37.16	Sesquiterp. alcohol
Spathulenol	33.73	1568	0.08	0.09	2014	37.90	Sesquiterp. alcohol
Globulol	34.10	1573	0.42	0.41	1965	35.90	Sesquiterp. alcohol
Viridiflorol	34.60	1580	0.23	0.19	1972	36.24	Sesquiterp. alcohol
Guaiol	34.76	1582	0.15	0.14	2003	37.54	Sesquiterp. alcohol
1,10-diepi-Cubenol	36.22	1608	0.15	0.17	1949	35.16	Sesquiterp. alcohol
1-epi-Cubenol	36.40	1612	0.20	0.19	1952	35.30	Sesquiterp. alcohol
Cubenol	37.02	1627	0.09	0.09	1943	34.88	Sesquiterp. alcohol
τ -Cadinol	37.46	1638	0.03	0.02	2073	39.73	Sesquiterp. alcohol
τ -Muurolol	37.59	1641	0.04	0.04	2095	40.45	Sesquiterp. alcohol
α -Muurolol	37.69	1643	0.02	0.02	2107	40.77	Sesquiterp. alcohol
Total identified			98.53%	99.05%			

*: 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.



