

GC-MS Profiling Analysis Prepared for Jade Bloom, Inc

Date: January 30, 2018
 Sample: Tea Tree Oil
 Type: Essential Oil
 Source: *Melaleuca alternifolia*
 Batch: #Lot 18020220

IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
<i>cis</i> -Hex-3-en-1-ol	2.50	865	0.03	0.03	1330	5.16	Aliphatic alcohol
α -Thujene	3.31	920	0.45	0.45	955	1.04	Monoterpene
α -Pinene	3.43	927	3.31	3.29	945	1.01	Monoterpene
Thuja-2,4(10)-diene	3.71	943	0.02	0.41	1061	1.72*	Monoterpene
Sabinene	4.14	969	0.41	[0.41]	1061	1.72*	Monoterpene
β -Pinene	4.20	972	0.63	0.63	1040	1.57	Monoterpene
Myrcene	4.48	989	0.44	0.43	1117	2.25	Monoterpene
α -Phellandrene	4.76	1005	0.34	0.33	1110	2.16	Monoterpene
α -Terpinene	4.98	1016	9.57	9.53	1126	2.36	Monoterpene
para-Cymene	5.16*	1026	5.76	3.04	1209	3.43	Monoterpene
1,8-Cineole	5.16*	1026	[5.76]	1.41	1147	2.62	Monoterp. ether
Limonene	5.16*	1026	[5.76]	1.31	1141	2.55	Monoterpene
<i>trans</i> - β -Ocimene	5.54	1047	0.19	0.19	1202	3.32	Monoterpene
γ -Terpinene	5.79	1060	20.26	20.27	1192	3.21	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	6.01*	1072	0.13	0.07	1382	5.92	Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	6.01*	1072	[0.13]	0.07	1408	6.35	Monoterp. alcohol
Terpinolene	6.22	1084	2.96	2.91	1223	3.62	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.35	1091	0.06	0.05	1404	6.25	Monoterp. alcohol
para-Cymenene	6.43	1095	0.06	0.05	1369	5.73	Monoterpene
Linalool	6.71	1106	0.06	0.17	1502	8.21*	Monoterp. alcohol
<i>trans</i> -para-Mentha-2,8-dien-1-ol	7.24*	1125	0.14	0.09	1561	10.08	Monoterp. alcohol
<i>cis</i> -para-Menth-2-en-1-ol	7.24*	1125	[0.14]	[0.17]	1502	8.21*	Monoterp. alcohol
<i>cis</i> -para-Mentha-2,8-dien-1-ol	7.64	1140	0.18	0.22	1602	11.36	Monoterp. alcohol
<i>trans</i> -para-Menth-2-en-1-ol	7.72	1143	0.06	0.09	1566	10.23	Monoterp. alcohol
Camphor	7.83	1147	0.07	0.04	1423	6.65	Monoterp. ketone
Unknown (m/z = 109, 124 (39), 119 (35), 43 (35), 91 (31)...) analog	7.93	1150	0.02	0.08	1402	6.22	
Terpinen-4-ol	9.07	1191	40.90	43.29	1538	9.38*	Monoterp. alcohol
para-Cymen-8-ol	9.45	1202	0.06	0.03	1773	20.23	Monoterp. alcohol
α -Terpineol	9.58	1205	2.97	3.13	1629	12.61*	Monoterp. alcohol
<i>trans</i> -Piperitol	10.01	1215	0.05	0.06	1673	14.65	Monoterp. alcohol
α -Copaene	17.71	1356	0.12	0.08	1426	6.70	Sesquiterpene
β -Elemene	18.94	1375	0.02	0.28	1518	8.73*	Sesquiterpene
α -Gurjunene	19.68	1386	0.35	0.37	1458	7.34	Sesquiterpene
β -Caryophyllene	20.61	1399	0.28	[0.28]	1518	8.73*	Sesquiterpene
β -Copaene	21.24*	1407	0.11	0.05	1513	8.57	Sesquiterpene
Methyleugenol	21.24*	1407	[0.11]	0.03	1943	31.47	Phenylpropanoid
Aromadendrene	22.07	1417	2.02	[43.29]	1538	9.38*	Sesquiterpene

<i>trans</i> - α -Bergamotene	22.19	1418	0.12	0.21	1540	9.43	Sesquiterpene
Seychellene	22.68	1424	0.14	[43.29]	1538	9.38*	Sesquiterpene
α -Guaiene	23.00	1428	0.08	0.08	1524	8.94	Sesquiterpene
α -Humulene	23.42	1433	0.07	0.31	1579	10.64*	Sesquiterpene
allo-Aromadendrene	23.69	1436	0.54	0.57	1558	9.97	Sesquiterpene
<i>trans</i> -Cadinane-1(6),4-diene	25.09	1453	0.28	[0.31]	1579	10.64*	Sesquiterpene
α -Amorphene	26.10	1465	0.22	0.22	1621	12.23*	Sesquiterpene
β -Selinene	26.28	1467	0.23	[0.22]	1621	12.23*	Sesquiterpene
Viridiflorene	26.52	1470	1.35	1.30	1612	11.80	Sesquiterpene
Bicyclogermacrene	26.92*	1474	0.66	0.50	1637	12.99	Sesquiterpene
α -Selinene	26.92*	1474	[0.66]	[3.13]	1629	12.61*	Sesquiterpene
α -Muurolene	27.67	1483	0.17	0.14	1640	13.12	Sesquiterpene
γ -Cadinene	28.77	1496	0.08	0.24	1663	14.18*	Sesquiterpene
δ -Cadinene	29.41	1505	0.92	0.92	1670	14.47	Sesquiterpene
Zonarene	29.58	1508	0.21	[0.24]	1663	14.18*	Sesquiterpene
<i>trans</i> -Calamenene	29.77	1510	0.08	0.07	1730	17.62	Sesquiterpene
<i>trans</i> -Cadinane-1,4-diene	30.54	1521	0.15	0.15	1686	15.24	Sesquiterpene
Spathulenol	34.03	1571	0.06	0.08	2020	35.73	Sesquiterp. alcohol
Globulol	34.40	1576	0.41	0.46	1974	33.30	Sesquiterp. alcohol
Viridiflorol	34.89	1583	0.18	0.17	1981	33.67	Sesquiterp. alcohol
Guaiol	35.27	1588	0.04	0.10	2009	35.27	Sesquiterp. alcohol
Copaborneol	35.66	1594	0.07				Sesquiterp. alcohol
1,10-diepi-Cubenol	36.47	1610	0.09	0.13	1957	32.29	Sesquiterp. alcohol
1-epi-Cubenol	36.67	1615	0.13	0.13	1959	32.38	Sesquiterp. alcohol
Cubenol	37.28	1631	0.06	0.07	1948	31.76	Sesquiterp. alcohol
α -Muurolool	37.81	1643	0.02	0.03	2103	38.59	Sesquiterp. alcohol
Total identified			98.37%	98.28%			

*: 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

HEALTH, HEALING & HAPPINESS

OTHER DATA

Physical aspect : Clear liquid

Refractive index : 1.4783 ± 0.0003 (20 °C)

COMPLIANCE WITH ISO 4730:2017 (OIL OF MELALEUCA, TERPINEN-4-OL TYPE (TEA TREE OIL))

Compound	Prescribed content		Observed %	Complies?
	Min. %	Max. %		
α -Pinene	1	4	3.3	Yes
Sabinene	tr	3.5	0.4	Yes
α -Terpinene	6	12	9.6	Yes
Limonene	0.5	1.5	1.3	Yes
para-Cymene	0.5	8	3.0	Yes
1,8-Cineole	tr	10	1.4	Yes
γ -Terpinene	14	28	20.3	Yes
Terpinolene	1.5	5	3.0	Yes
Terpinen-4-ol	35	48	40.9	Yes
α -Terpineol	2	5	3.0	Yes
Aromadendrene	0.2	3	2.0	Yes
Viridiflorene	0.1	3	1.4	Yes
δ -Cadinene	0.2	3	0.9	Yes
Globulol	tr	1	0.4	Yes
Viridiflorol	tr	1	0.2	Yes
Refractive index	1.475	1.482	1.4783	Yes

CONCLUSION

No adulterant, contaminant or diluent were detected using this method. The oil complies with the ISO standard.



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