



GC/MS BATCH NUMBER: E10104

ESSENTIAL OIL: EUCALYPTUS LEMON ORGANIC
BOTANICAL NAME: EUCALYPTUS CITRIODORA
ORIGIN: AUSTRALIAN

KEY CONSTITUENTS PRESENT IN THIS BATCH OF EUCALYPTUS LEMON ORGANIC OIL	%
CITRONELLAL	69.3
CITRONELLOL	7.1
ISOPULEGOL	5.7
iso-ISOPULEGOL	3.4
1,8-CINEOLE	1.2

Comments from Robert Tisserand: Smells delightful and appears to be an unrectified oil.

Date : October 21, 2016

SAMPLE IDENTIFICATION

Internal code : 16J19-PTH8-1-DM

Customer identification : Eucalyptus Lemon Organic - E1010455R

Type : Essential oil

Source : *Eucalyptus citriodora*

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 : 2016-10-20

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.	
Isobutyl isobutyrate	3.18	914	0.08	0.07	1028	1.28	Aliphatic ester
α -Thujene	3.25	918	0.03	0.05	947	0.87	Monoterpene
α -Pinene	3.35	924	0.37	0.36	940	0.84	Monoterpene
Sabinene	4.07	967	0.09	0.09	1050	1.45	Monoterpene
β -Pinene	4.13	971	0.67	0.70	1034	1.32	Monoterpene
Myrcene	4.41	988	0.11	0.10	1110	1.93	Monoterpene
α -Phellandrene	4.68	1004	0.02	0.01	1117	2.00	Monoterpene
α -Terpinene	4.87	1015	0.05	0.17	1134	2.21	Monoterpene
Isoamyl isobutyrate	4.93	1018	0.02	1.33	1138	2.26*	Aliphatic ester
para-Cymene	5.06	1025	0.06	0.14	1203	3.00*	Monoterpene
Limonene	5.09	1027	0.23	[1.33]	1138	2.26*	Monoterpene
1,8-Cineole	5.15	1030	1.18	[1.33]	1138	2.26*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.28	1037	0.09	0.25	1181	2.75*	Monoterpene
<i>trans</i> - β -Ocimene	5.46	1047	0.04	0.03	1195	2.92	Monoterpene
γ -Terpinene	5.64	1057	0.16	[0.25]	1181	2.75*	Monoterpene
Bergamal	5.66	1058	0.16	0.13	1289	4.17	Aliphatic aldehyde
para-Mentha-3,8-diene	5.89	1070	0.09	[0.14]	1203	3.00*	Monoterpene
Terpinolene	6.11	1082	0.11	0.10	1218	3.19	Monoterpene
Fenchone	6.25	1090	0.01	0.02	1314	4.52	Monoterp. ketone
Linalool	6.64	1106	0.30	6.65	1488	7.33*	Monoterp. alcohol
<i>cis</i> -Rose oxide	6.70	1109	0.10	0.13	1286	4.13	Monoterp. ether
<i>trans</i> -Rose oxide	7.04	1122	0.04	0.04	1300	4.33	Monoterp. ether
neo-Isopulegol	7.58	1142	0.11	0.13	1501	7.58	Monoterp. alcohol
Isopulegol	7.76	1148	5.71	[6.65]	1488	7.33*	Monoterp. alcohol
Citronellal	8.08†	1160	72.66	69.33	1424	6.12	Monoterp. aldehyde
iso-Isopulegol	8.10†	1161	[72.66]	3.35	1476	7.09	Monoterp. alcohol
neoisopulegol	8.36	1171	0.39				Monoterp. alcohol
Borneol	8.57	1179	0.10	1.09	1599	10.27*	Monoterp. alcohol
Terpinen-4-ol	8.70	1183	0.05	0.44	1536	8.39*	Monoterp. alcohol
α -Terpineol	9.35	1203	0.09	0.08	1620	10.90	Monoterp. alcohol
Nerol	10.51	1229	0.05	0.04	1724	15.39	Monoterp. alcohol
Citronellol	10.87	1237	7.05	7.33	1703	14.48*	Monoterp. alcohol
Geraniol	11.82	1259	0.04	0.06	1779	18.43	Monoterp. alcohol
Geranial	12.50	1273	0.04	0.02	1646	11.94*	Monoterp. aldehyde
Citronellyl acetate	17.00*	1349	1.20	[1.09]	1599	10.27*	Monoterp. ester
para-Menthane-3,8-diol isomer I	17.00*	1349	[1.20]				Monoterp. alcohol
Citronellic acid	17.43	1356	0.80	0.66	2175	39.26	Monoterp. acid
β -Elemene	18.59	1374	0.02	[0.44]	1536	8.39*	Sesquiterpene
Geranyl acetate	19.36	1385	0.33	[7.33]	1703	14.48*	Monoterp. ester

para-Menthane-3,8-diol isomer II	19.94	1394	0.12				Monoterp. alcohol
β-Caryophyllene	20.23	1398	0.95	0.73	1523	7.99	Sesquiterpene
α-Humulene	22.98	1431	0.06	0.10	1589	9.95	Sesquiterpene
Bicyclogermacrene	26.41	1472	0.04	[0.02]	1646	11.94*	Sesquiterpene
δ-Cadinene	28.88	1503	0.06	0.08	1669	12.94	Sesquiterpene
Caryophyllene oxide	33.46	1565	0.08	0.05	1847	22.55	Sesquiterp. ether
Unknown (m/z = 69, 41 (38), 81 (33), 121 (32), 83 (31)... 210? (4))	44.88	1866	0.09				
Unknown (m/z = 81, 121 (77), 93 (75), 69 (74), 41 (53), 205 (51)... 290 (25))	45.01	1871	0.09				
Unknown (m/z = 81, 93 (81), 69 (76), 121 (75), 205 (68), 41 (55)... 290 (27))	45.16	1876	0.12				
Unknown (m/z = 137, 81 (97), 95 (51), 69 (47), 41 (36), 154 (35), 121 (31)...)...	46.26	1918	1.57	1.44	2119	37.52	
Unknown (m/z = 81, 205 (67), 121 (55), 69 (55), 93 (53), 41 (44)... 290? (8))	47.26	1958	0.08				
Unknown (m/z = 81, 137 (72), 69 (61), 95 (48), 41 (36)...)...	47.32	1960	0.22				
Unknown (m/z = 137, 81 (97), 69 (67), 95 (52), 41 (42), 183 (32)...)...	47.59	1971	0.36				
Unknown (m/z = 81, 137 (58), 95 (57), 69 (55)... 223 (14)...)...	49.87	2068	0.12				
Unknown (m/z = 81, 69 (81), 43 (70), 95 (66), 139 (52), 109 (49), 137 (48), 41 (47), 55 (45)...)...	51.11	2122	0.08				
Total identified			93.96%	93.86%			

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

†: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

Note: no correction factor was applied

OTHER DATA

Physical aspect : Clear liquid

Refractive index : 1.4560 ± 0.0003 (20 °C)

CONCLUSION

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



