



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: LI0103

ESSENTIAL OIL: LEMON STEAM DISTILLED

BOTANICAL NAME: CITRUS X LIMON

ORIGIN: SICILY

KEY CONSTITUENTS PRESENT IN THIS BATCH OF LEMON STEAM DISTILLED OIL	%
1,8-CINEOLE + LIMONENE	66.9
SABINENE + β -PINENE	14.7
γ -TERPINENE	9.3
α -PINENE	1.8
GERANIAL	1.8
MYRCENE	1.6
NERAL	1.1

Comments from Robert Tisserand: Not quite as lively as expressed Lemon oil, but beautifully juicy. Constituents are in expected amounts.

Date : September 7, 2017

SAMPLE IDENTIFICATION

Internal code : 17H30-PTH1-1-DM

Customer identification : Lemon Steam Distilled - Sicily - LI010374R

Type : Essential oil

Source : *Citrus x limon*

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

Analysis date : 2017-09-01

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.	
Tricyclene	3.23	915	0.01	tr	915	1.10	Monoterpene
α -Thujene	3.31	920	0.37	0.73	953	1.25	Monoterpene
α -Pinene	3.42	926	1.84	1.46	941	1.21	Monoterpene
Camphene	3.70	943	0.06	0.05	992	1.51	Monoterpene
Sabinene	4.14†	969	14.72	14.69	1059	2.06††	Monoterpene
β -Pinene	4.23†	974	[14.72]	[14.69]	1041	1.90††	Monoterpene
Myrcene	4.48	989	1.59	1.45	1114	2.66	Monoterpene
Δ^3 -Carene	4.70	1002	0.03	0.02	1092	2.38	Monoterpene
α -Phellandrene	4.76	1005	0.05	0.03	1109	2.60	Monoterpene
Octanal	4.87	1011	0.04	0.05	1231	4.22	Aliphatic aldehyde
α -Terpinene	4.95	1015	0.27	0.41	1120	2.73	Monoterpene
1,8-Cineole	5.28*	1033	66.93	66.63	1150	3.13*	Monoterp. ether
Limonene	5.28*	1033	[66.93]	[66.63]	1150	3.13*	Monoterpene
<i>cis</i> - β -Ocimene	5.36	1038	0.04	9.28	1194	3.67*	Monoterpene
<i>trans</i> - β -Ocimene	5.54	1047	0.09	0.11	1203	3.80	Monoterpene
γ -Terpinene	5.76	1059	9.26	[9.28]	1194	3.67*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	6.01	1073	0.02	0.02	1371	6.39*	Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	6.06	1076	0.01	0.01	1402	6.96*	Monoterp. alcohol
Terpinolene	6.20	1083	0.40	0.38	1226	4.14	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.42	1095	0.01	[0.01]	1402	6.96*	Monoterp. alcohol
Linalool	6.69	1106	0.10	0.09	1495	9.18	Monoterp. alcohol
Nonanal	6.78	1109	0.07	0.07	1336	5.81	Aliphatic aldehyde
<i>cis</i> -Limonene oxide	7.34	1130	0.01	[0.02]	1371	6.39*	Monoterp. ether
<i>trans</i> -Limonene oxide	7.47	1134	0.01	0.01	1386	6.62	Monoterp. ether
Citronellal	7.97	1152	0.06	0.06	1414	7.24	Monoterp. aldehyde
Terpinen-4-ol	8.80	1182	0.01	0.08	1524	10.25*	Monoterp. alcohol
α -Terpineol	9.46	1203	0.14	0.14	1619	14.13	Monoterp. alcohol
Decanal	9.79	1210	0.05	0.05	1435	7.74	Aliphatic aldehyde
Nerol	10.56	1227	0.03	0.03	1726	20.19	Monoterp. alcohol
Neral	11.16	1241	1.10	1.14	1597	13.00	Monoterp. aldehyde
Geranial	12.70	1274	1.77	1.81	1644	15.47	Monoterp. aldehyde
Neryl acetate	17.86	1360	0.30	0.44	1657	16.17*	Monoterp. ester
Geranyl acetate	19.35	1382	0.22	0.22	1690	17.92	Monoterp. ester
β -Caryophyllene	20.60	1400	0.12	0.11	1517	9.98	Sesquiterpene
<i>trans</i> - α -Bergamotene	22.17	1419	0.07	[0.08]	1524	10.25*	Sesquiterpene
β -Bisabolene	28.86	1499	0.10	[0.44]	1657	16.17*	Sesquiterpene
Total identified			99.90%	99.57%			

*: 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

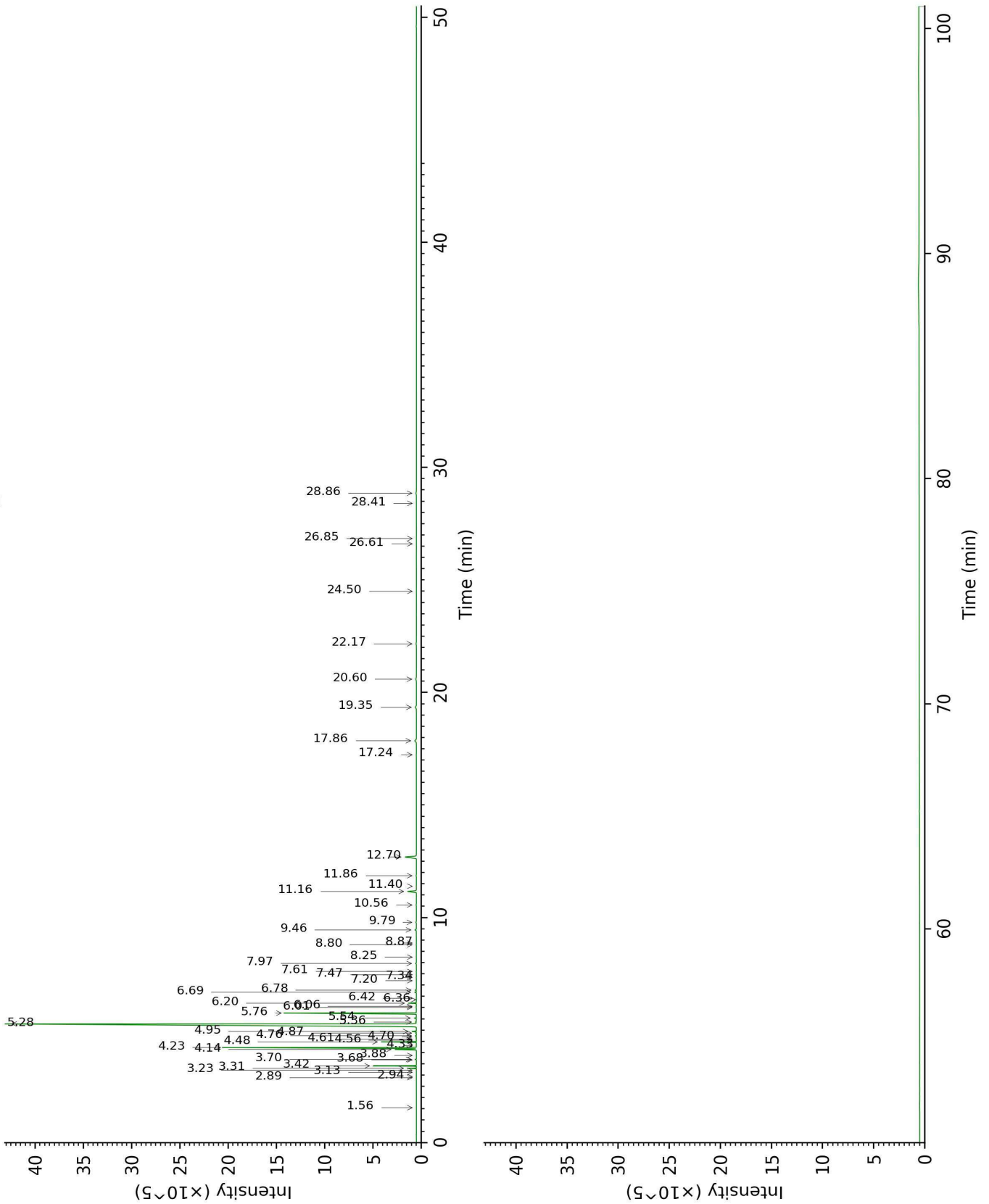
Physical aspect : Clear liquid

Refractive index : 1.4718 ± 0.0003 (20 °C)

CONCLUSION

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

17H30-PTH1-1-DM_BP5



17H30-PTH1-1-DM_WAX

