



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: O30105

ESSENTIAL OIL: ORANGE ORGANIC
BOTANICAL NAME: CITRUS SINENSIS
ORIGIN: MEXICO

KEY CONSTITUENTS PRESENT IN THIS BATCH OF ORANGE ORGANIC OIL	%
LIMONENE	94.6
MYRCENE	2.0

Comments from Robert Tisserand: Excellent fruity odor profile and conforms to the ISO standard apart from the absence of one minor constituent.

Date : December 14, 2016

SAMPLE IDENTIFICATION

Internal code : 16L06-PTH2-1-DM

Customer identification : Organic Sweet Orange - O3010566R

Type : Essential oil

Source : *Citrus sinensis*

Customer : Plant Therapy

ANALYSIS

Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

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

Analysis date : 2016-12-09

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.	
α -Thujene	3.26	919	tr	0.56	951	0.88*	Monoterpene
α -Pinene	3.37	925	0.54	[0.56]	951	0.88*	Monoterpene
Sabinene	4.09	969	0.21	0.21	1058	1.52	Monoterpene
β -Pinene	4.15	973	0.02	0.02	1043	1.39	Monoterpene
Myrcene	4.44	990	2.00	1.97	1117	2.00	Monoterpene
Δ 3-Carene	4.71*	1006	0.08	0.05	1093	1.80	Monoterpene
α -Phellandrene	4.71*	1006	[0.08]	0.01	1114	1.96	Monoterpene
Octanal	4.83	1012	0.25	0.25	1230	3.36	Aliphatic aldehyde
Limonene	5.26*	1036	95.61	94.58	1157	2.47*	Monoterpene
1,8-Cineole	5.26*	1036	[95.61]	[1.24]	1157	2.48*	Monoterp. ether
<i>trans</i> - β -Ocimene	5.50	1049	0.03	0.02	1205	3.03	Monoterpene
Terpinolene	6.15	1084	0.01	0.01	1226	3.30	Monoterpene
Octanol	6.22	1088	0.03	0.02	1493	7.42	Aliphatic alcohol
Linalool	6.70	1109	0.36	0.36	1484	7.25*	Monoterp. alcohol
Nonanal	6.73	1110	0.05	0.04	1337	4.85	Aliphatic aldehyde
<i>cis</i> -Limonene oxide	7.21	1128	tr	tr	1383	5.50	Monoterp. ether
<i>trans</i> -Limonene oxide	7.40	1135	0.01				Monoterp. ether
Citronellal	7.91	1154	0.04	0.04	1416	5.98	Monoterp. aldehyde
α -Terpineol	9.46	1206	0.04	0.03	1619	10.86	Monoterp. alcohol
Decanal	9.71	1211	0.22	0.20	1440	6.42*	Aliphatic aldehyde
Neral	11.09	1242	0.05	0.04	1594	10.10	Monoterp. aldehyde
Carvone	11.33	1248	0.01	0.01	1643	11.81	Monoterp. ketone
Geranial	12.61	1276	0.09	0.08	1646	11.94	Monoterp. aldehyde
Undecanal	14.60	1312	0.01	0.01	1546	8.70	Aliphatic aldehyde
α -Copaene	17.50	1357	0.02	[0.20]	1440	6.42*	Sesquiterpene
β -Cubebene	18.49	1372	0.02	[0.36]	1484	7.25*	Sesquiterpene
β -Caryophyllene	20.39	1400	0.02	0.03	1535	8.36*	Sesquiterpene
<i>trans</i> - α -Bergamotene	21.30	1411	0.02	[0.03]	1535	8.36*	Sesquiterpene
Dodecanal	21.59	1415	0.04	0.03	1653	12.26	Aliphatic aldehyde
Germacrene D	25.39	1460	0.02	0.01	1629	11.19	Sesquiterpene
Valencene?	26.38	1471	0.03				Sesquiterpene
δ -Cadinene	29.12	1506	0.03	0.02	1685	13.66	Sesquiterpene
β -Sinensal	39.73	1694	0.03	0.03	2129	37.90	Sesquiterp. aldehyde
α -Sinensal	41.68	1755	0.03	0.02	2231	40.71	Sesquiterp. aldehyde
Total identified			99.92%	98.65%			

*: 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 : Bright yellow liquid

Refractive index : 1.4723 ± 0.0003 (20 °C)

CONCLUSION

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



