



**PLANT THERAPY**  
100% PURE ESSENTIAL OILS

**GC/MS BATCH NUMBER: O30106**

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**ESSENTIAL OIL:** ORANGE ORGANIC  
**BOTANICAL NAME:** CITRUS SINENIS  
**ORIGIN:** ITALY

KEY CONSTITUENTS PRESENT IN THIS BATCH OF ORANGE ORGANIC OIL	%
LIMONENE	95.0
MYRCENE	1.8

Comments from Robert Tisserand: "Freshly peeled orange" odor profile. Meets all 12 ISO standards for Sweet Orange.

**Date :** October 9, 2017

*SAMPLE IDENTIFICATION*

**Internal code :** 17J06-PTH2-1-CC

**Customer identification :** Orange Organic - Italy - O3010674R

**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).

Identifications double-checked by GC-MS

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

**Analysis date :** 2017-10-07

Checked and approved by :

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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-Pinene	3.41	926	0.44	0.42	935	1.18	Monoterpene
Sabinene	4.13	969	0.22	0.21	1053	2.02	Monoterpene
β-Pinene	4.20	972	0.03	0.02	1031	1.83	Monoterpene
Myrcene	4.48	989	1.84	1.83	1111	2.62	Monoterpene
Δ3-Carene	4.76*	1005	0.11	0.06	1088	2.33	Monoterpene
α-Phellandrene	4.76*	1005	[0.11]	0.01	1104	2.53	Monoterpene
Octanal	4.87	1011	0.33	0.33	1229	4.19	Aliphatic aldehyde
Limonene	5.30*	1035	95.22	95.03	1149	3.11	Monoterpene
para-Cymene	5.30*	1035	[95.22]	0.02	1201	3.77*	Monoterpene
cis-β-Ocimene	5.37	1038	tr	0.02	1181	3.57*	Monoterpene
trans-β-Ocimene	5.54	1048	0.02	[0.02]	1201	3.77*	Monoterpene
γ-Terpinene	5.73	1058	0.01	[0.02]	1181	3.57*	Monoterpene
Terpinolene	6.20*	1083	0.03	0.01	1223	4.10	Monoterpene
Octanol	6.20*	1083	[0.03]	0.02	1497	9.26	Aliphatic alcohol
Linalool	6.69	1106	0.30	0.30	1489	9.04	Monoterp. alcohol
Nonanal	6.79	1109	0.05	0.04	1332	5.76	Aliphatic aldehyde
Citronellal	7.97	1152	0.03	0.03	1410	7.15	Monoterp. aldehyde
α-Terpineol	9.47	1203	0.03	0.04	1614	13.89	Monoterp. alcohol
Decanal	9.80	1211	0.29	0.29	1432	7.65	Aliphatic aldehyde
Neral	11.17	1241	0.04	0.04	1591	12.76	Monoterp. aldehyde
Geranial	12.68	1274	0.07	0.09	1639	15.19*	Monoterp. aldehyde
Undecanal	14.71	1312	0.01				Aliphatic aldehyde
α-Copaene	17.69	1357	0.02	0.01	1427	7.52	Sesquiterpene
Isocaryophyllene	20.59	1400	0.01	0.02	1513	9.84	Sesquiterpene
Dodecanal	21.74	1414	0.03	[0.09]	1639	15.19*	Aliphatic aldehyde
Valencene	26.86	1475	0.01	0.01	1661	16.38	Sesquiterpene
δ-Cadinene	29.35	1506	0.02	0.01	1667	16.71	Sesquiterpene
β-Sinensal	39.81	1694	0.02	0.03	2114	40.72	Sesquiterp. aldehyde
α-Sinensal	41.75	1754	0.01	0.02	2237	43.84	Sesquiterp. aldehyde
Nootkatone	43.00	1793	0.06	0.05	2405	47.57	Sesquiterp. ketone
Tangeretin	70.29	3167	0.04				Flavonoid
Nobiletin	73.18	3339	0.11				Flavonoid
Hexamethoxyflavone isomer?	73.46	3353	0.10				Flavonoid
<b>Total identified</b>			<b>99.5%</b>	<b>98.96%</b>			

\*: 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*

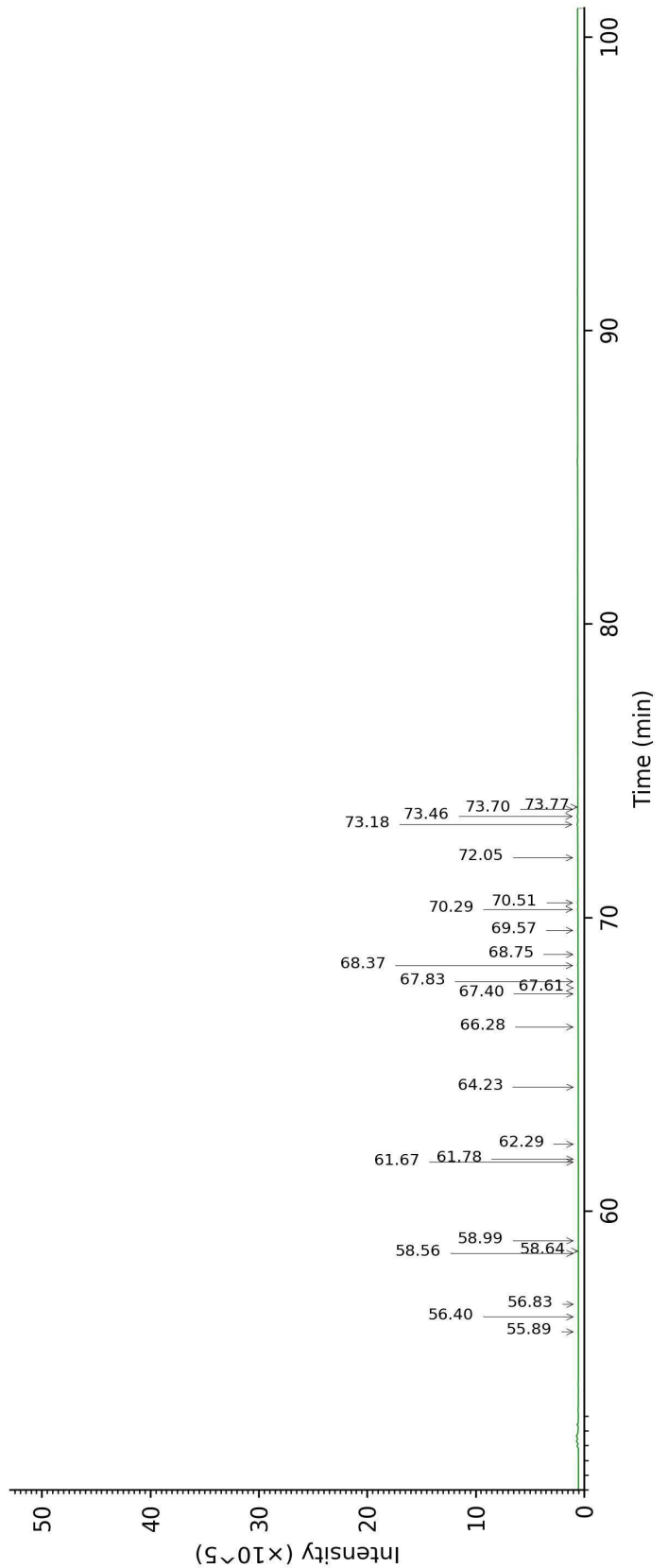
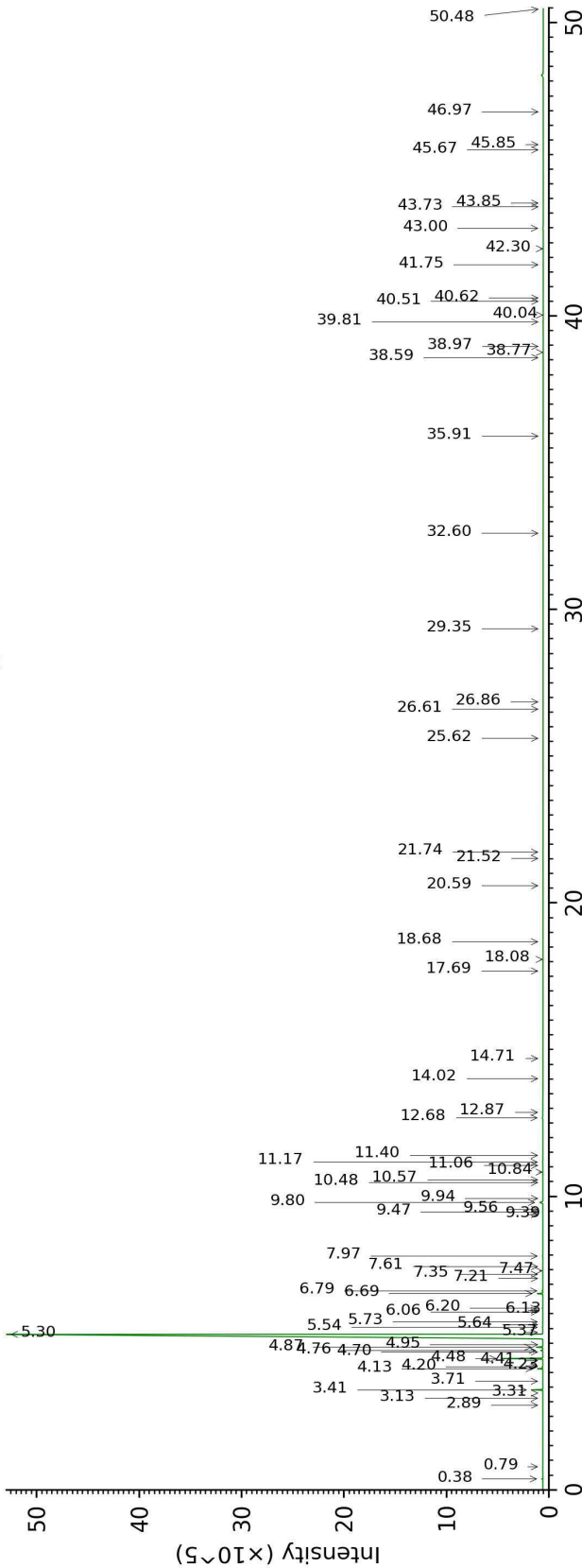
**Physical aspect :** Yellow liquid

**Refractive index :**  $1.4725 \pm 0.0003$  (20 °C)

*CONCLUSION*

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

17J06-PTH2-1-CC\_BP5



17J06-PTH2-1-CC\_WAX

