



## GC/MS BATCH NUMBER: O30107

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**ESSENTIAL OIL:** ORANGE SWEET ORGANIC

**BOTANICAL NAME:** CITRUS SINENSIS

**ORIGIN:** MEXICA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF ORANGE SWEET ORGANIC OIL	%
1,8-Cineole + Limonene	93.10
Myrcene	1.93

Comments from Robert Tisserand: Beautifully fresh, juicy odor quality. All twelve key ISO constituents are within range.

**Date :** September 7, 2017

*SAMPLE IDENTIFICATION*

**Internal code :** 17H30-PTH4-1-DM

**Customer identification :** Sweet Orange Organic - Mexico - O3010778R

**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 :** 2017-09-01

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.	
$\alpha$ -Pinene	3.42	926	0.54	0.53	941	1.20	Monoterpene
Sabinene	4.13	969	0.21	0.20	1058	2.06	Monoterpene
$\beta$ -Pinene	4.20	973	0.02	0.01	1038	1.89	Monoterpene
Myrcene	4.48	989	1.93	1.94	1114	2.67	Monoterpene
$\Delta^3$ -Carene	4.76*	1005	0.09	0.06	1091	2.38	Monoterpene
$\alpha$ -Phellandrene	4.76*	1005	[0.09]	0.02	1107	2.57	Monoterpene
Octanal	4.87	1011	0.36	0.36	1232	4.25	Aliphatic aldehyde
1,8-Cineole	5.30*	1034	93.10	93.77	1153	3.16*	Monoterp. ether
Limonene	5.30*	1034	[93.10]	[93.77]	1153	3.16*	Monoterpene
<i>cis</i> - $\beta$ -Ocimene	5.37	1038	0.01	0.01	1191	3.62*	Monoterpene
<i>trans</i> - $\beta$ -Ocimene	5.54	1047	0.02	0.02	1205	3.83	Monoterpene
$\gamma$ -Terpinene	5.73	1058	tr	[0.01]	1191	3.62*	Monoterpene
Terpinolene	6.20*	1083	0.03	0.01	1225	4.14	Monoterpene
Octanol	6.20*	1083	[0.03]	0.03	1501	9.42	Aliphatic alcohol
Linalool	6.69	1106	0.37	0.38	1495	9.19	Monoterp. alcohol
Nonanal	6.78	1109	0.06	0.05	1336	5.82	Aliphatic aldehyde
<i>trans</i> -Limonene oxide	7.46	1134	0.01	0.01	1386	6.62	Monoterp. ether
Citronellal	7.96	1152	0.05	0.04	1413	7.23	Monoterp. aldehyde
$\alpha$ -Terpineol	9.45	1203	0.04	0.07	1618	14.10*	Monoterp. alcohol
Decanal	9.78	1210	0.24	0.24	1435	7.74	Aliphatic aldehyde
Neral	11.14	1240	0.06	0.06	1596	12.98*	Monoterp. aldehyde
Geranial	12.65	1273	0.10	0.17	1643	15.43*	Monoterp. aldehyde
Decanol	12.83	1277	0.02	0.01	1715	19.49	Aliphatic alcohol
$\alpha$ -Copaene	17.67	1357	0.02	0.02	1429	7.59	Sesquiterpene
$\beta$ -Caryophyllene	20.57	1400	0.01	0.03	1516	9.95	Sesquiterpene
Dodecanal	21.49	1411	0.03	[0.17]	1643	15.43*	Aliphatic aldehyde
<i>trans</i> - $\alpha$ -Bergamotene	21.69	1413	0.04	0.01	1538	10.77	Sesquiterpene
$\alpha$ -Humulene	23.34	1433	0.01	[0.06]	1596	12.98*	Sesquiterpene
<i>trans</i> - $\beta$ -Farnesene	24.48	1446	0.01	0.01	1626	14.49	Sesquiterpene
Germacrene D	25.57	1459	0.02	[0.07]	1618	14.10*	Sesquiterpene
Valencene	26.58	1472	0.01	0.02	1666	16.65	Sesquiterpene
$\delta$ -Cadinene	29.30	1505	0.03	0.03	1671	16.91	Sesquiterpene
( <i>E</i> )-Nerolidol	33.81	1568	0.02	0.06	1984	36.41	Sesquiterp. alcohol
Humulene epoxide II	35.17	1588	0.03	0.04	1899	32.51	Sesquiterp. ether
$\beta$ -Sinensal	39.75	1692	0.03	0.14	2123	40.95*	Sesquiterp. aldehyde
$\alpha$ -Sinensal	41.70	1752	0.03	0.02	2219	43.43	Sesquiterp. aldehyde
Tangeretin	70.20	3161	0.27				Flavonoid
Nobiletin	72.79	3319	0.08				Flavonoid
Heptamethoxyflavone isomer?	73.09	3334	0.77				Flavonoid
Hexamethoxyflavone	73.38	3349	0.59				Flavonoid

isomer?				
<b>Total identified</b>	<b>99.26%</b>	<b>98.37%</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

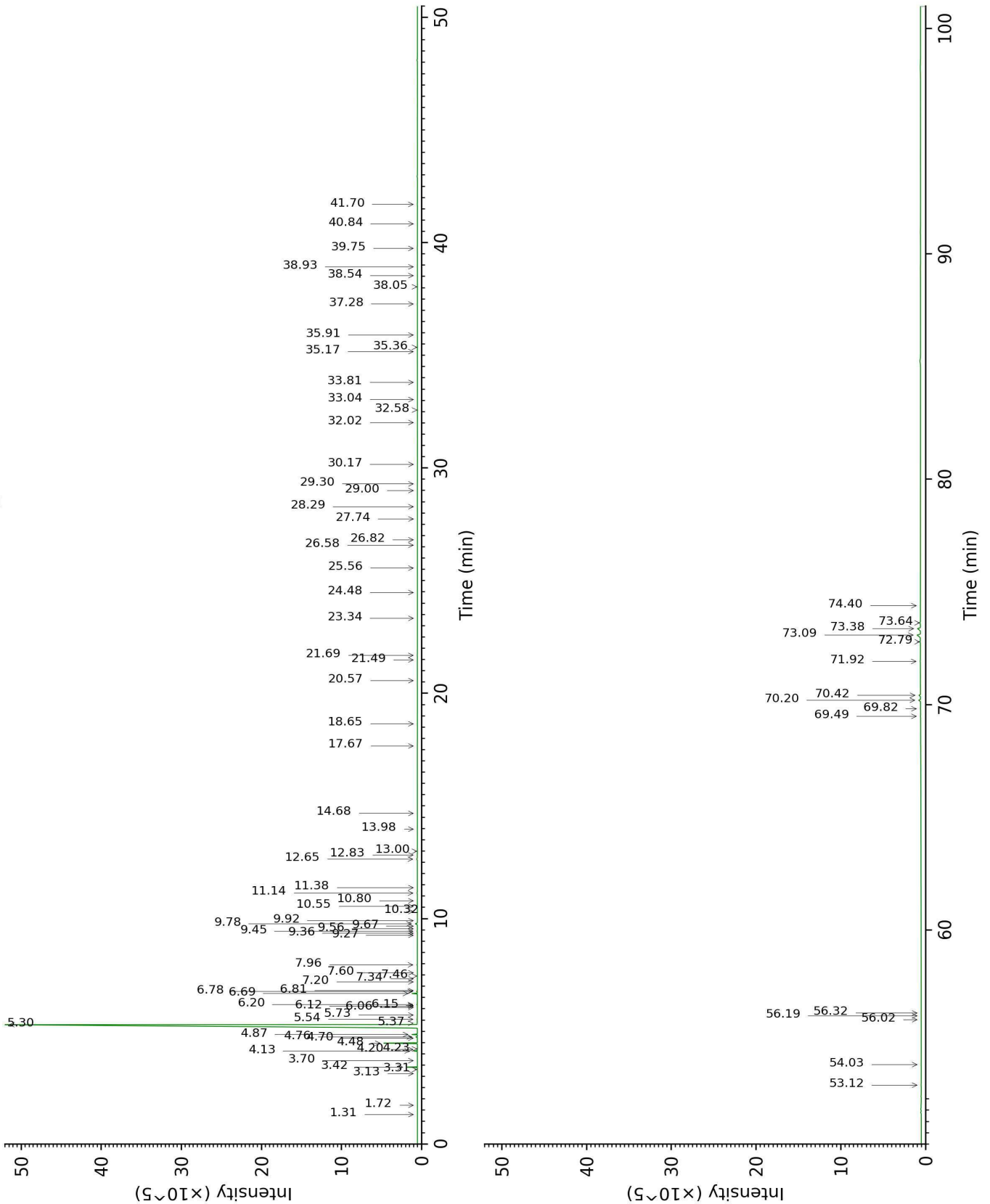
**Physical aspect :** Bright yellow liquid

**Refractive index :**  $1.4718 \pm 0.0003$  (20 °C)

#### CONCLUSION

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

17H30-PTH4-1-DM\_BP5



17H30-PTH4-1-DM\_WAX

