

Date : June 28, 2017

SAMPLE IDENTIFICATION

Internal code : 17F28-PTH2-1-DM

Customer identification : Blood Orange Organic - Italy - OH010074R

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 : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-06-28

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	3.32	923	0.01	0.52	946	1.03*	Monoterpene
α -Pinene	3.43	929	0.51	[0.52]	946	1.03*	Monoterpene
Sabinene	4.15	972	0.41	0.40	1060	1.76	Monoterpene
β -Pinene	4.21	976	0.17	0.16	1043	1.61	Monoterpene
Myrcene	4.50	993	1.85	1.85	1118	2.31	Monoterpene
α -Phellandrene	4.77*	1009	0.17	0.02	1110	2.24	Monoterpene
Δ 3-Carene	4.77*	1009	[0.17]	0.12	1091	2.06	Monoterpene
Octanal	4.88	1014	0.27	0.26	1232	3.80	Aliphatic aldehyde
Limonene	5.32*	1039	94.86	94.75	1155	2.80	Monoterpene
1,8-Cineole	5.32*	1039	[94.86]	0.71	1156	2.81	Monoterp. ether
para-Cymene	5.32*	1039	[94.86]	0.07	1207	3.46	Monoterpene
cis- β -Ocimene	5.39	1042	tr	0.13	1188	3.22*	Monoterpene
trans- β -Ocimene	5.56	1052	0.02	0.02	1202	3.39	Monoterpene
γ -Terpinene	5.74	1062	0.14	[0.13]	1188	3.22*	Monoterpene
Terpinolene	6.21	1087	0.04	0.03	1224	3.67	Monoterpene
Linalool	6.69	1109	0.28	0.27	1488	8.10	Monoterp. alcohol
Nonanal	6.79	1113	0.04	0.04	1338	5.32	Aliphatic aldehyde
cis-Limonene oxide	7.35	1133	0.01	0.01	1370	5.82	Monoterp. ether
trans-Limonene oxide	7.47	1138	0.01	0.01	1382	6.01	Monoterp. ether
Citronellal	7.98	1156	0.03	0.02	1416	6.53	Monoterp. aldehyde
α -Terpineol	9.45	1206	0.03	0.04	1622	12.33	Monoterp. alcohol
Decanal	9.80	1214	0.23	0.22	1442	7.01*	Aliphatic aldehyde
Neral	11.16	1244	0.03	0.03	1597	11.43	Monoterp. aldehyde
Geranial	12.67	1278	0.06	0.07	1653	13.58	Monoterp. aldehyde
α -Copaene	17.73	1361	0.01	[0.22]	1442	7.01*	Sesquiterpene
β -Cubebene	18.70	1376	0.02	0.01	1478	7.86	Sesquiterpene
Valencene	26.89	1480	0.01	0.01	1660	14.00	Sesquiterpene
δ -Cadinene	29.14	1508	0.01	0.01	1669	14.40	Sesquiterpene
β -Sinensal	39.77	1698	0.02	0.01	2132	39.37	Sesquiterp. aldehyde
α -Sinensal	41.71	1759	0.01	0.01	2229	42.04	Sesquiterp. aldehyde
Tangeretin	70.17	3180	0.07				Coumarin
Nobiletin	73.04	3354	0.19				Coumarin
Heptamethoxyflavone isomer?	73.30	3367	0.11				Flavonoid
Total identified			99.62%	99.8%			

*: 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

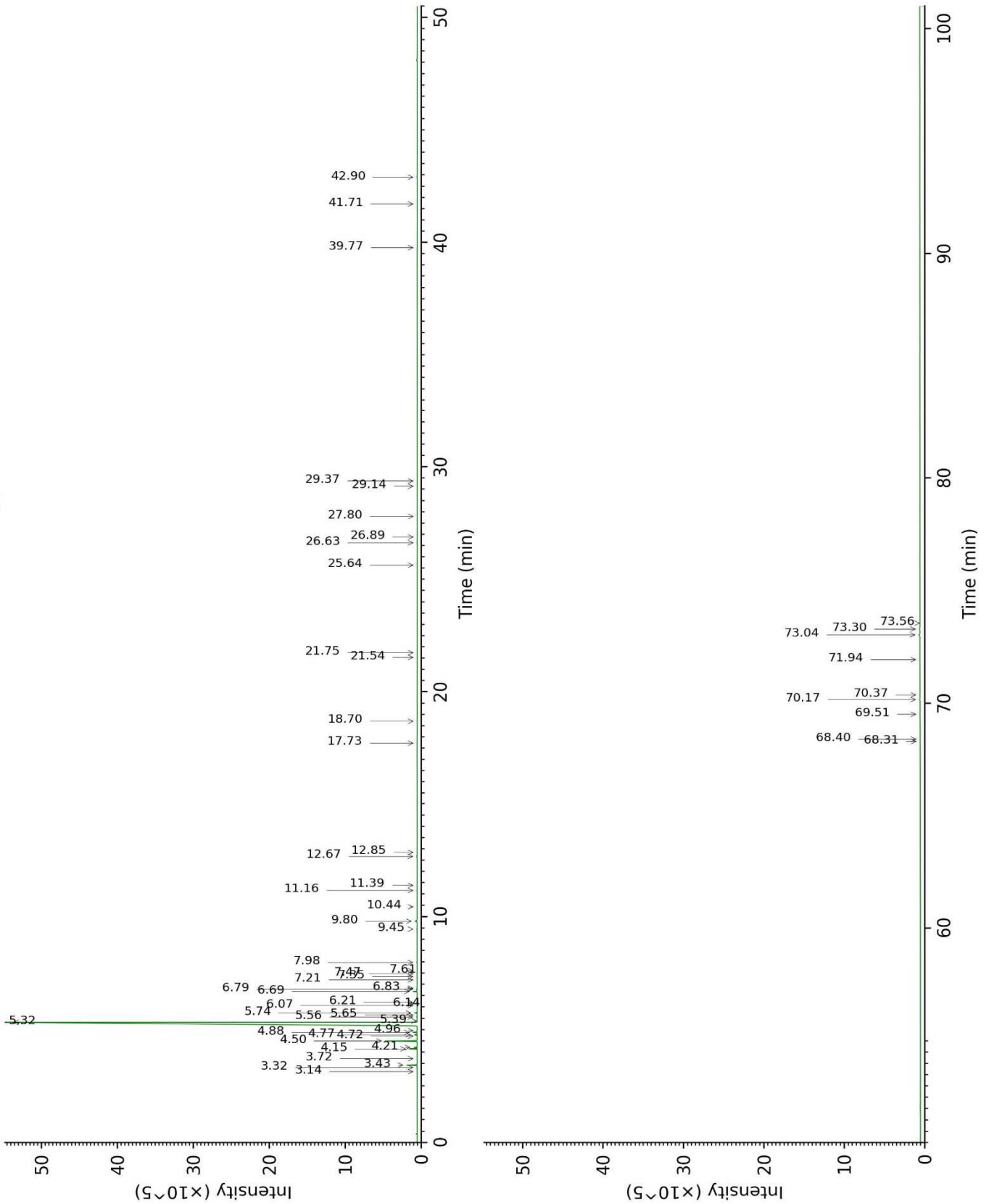
Physical aspect : Orange liquid

Refractive index : 1.4718 ± 0.0003 (20 °C)

CONCLUSION

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

17F28-PTH2-1-DM_BP5



17F28-PTH2-1-DM_WAX

