

ANALYSIS Yuzu Essential Oil

Laboratoire
PhytoChemia



Plus que des analyses... des conseils



Date : August 3, 2017

SAMPLE IDENTIFICATION

Internal code : 17G28-FSE1-1-CC

Customer Identification : Yuzo - Korea - 356673-269J

Type : Essential oil

Source : Citrus x junos

Customer : Flowers Shining Everywhere Inc.



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 : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-08-03



Checked and approved by :

Alexis St-Gelais, M. Sc., chimiste



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IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
α -Thujene	3.33	924	0.41	0.57	951	1.03	Monoterpene
α -Pinene	3.44	930	1.50	1.34	943	1.00	Monoterpene
Camphene	3.73	947	0.01	0.01	996	1.24	Monoterpene
Sabinene	4.16	973	0.17	0.16	1053	1.70	Monoterpene
β -Pinene	4.22	977	0.82	0.79	1037	1.55	Monoterpene
Myrcene	4.51	994	1.79	1.82	1101	2.23	Monoterpene
α -Phellandrene	4.78	1009	0.33	0.30	1095	2.16	Monoterpene
α -Terpinene	4.97	1020	0.12	0.14	1121	2.32	Monoterpene
Limonene	5.32*	1038	80.81	75.45	1151	2.68	Monoterpene
1,8-Cineole	5.32*	1038	[80.81]	3.02	1152	2.70	Monoterpene
para-Cymene	5.32*	1038	[80.81]	2.25	1203	3.35	Monoterpene
cis- β -Ocimene	5.39	1043	0.02	8.16	1188	3.16*	Monoterpene
trans- β -Ocimene	5.57	1052	0.16	0.13	1199	3.29	Monoterpene
γ -Terpinene	5.79	1064	8.19	[8.16]	1188	3.16*	Monoterpene
Terpinolene	6.23	1088	0.36	0.35	1220	3.56	Monoterpene
para-Cymenene	6.45	1100	0.05	0.02	1364	5.63	Monoterpene
Linalool	6.74	1126	1.26	1.27	1485	7.84	Monoterp. alcohol
cis-Limonene oxide	7.38	1134	0.10	0.14	1366	5.68	Monoterp. ether
trans-Limonene oxide	7.50	1139	0.09	0.08	1379	5.86	Monoterp. ether
cis-para-Mentha-2,8-dien-1-ol	7.65	1144	0.06	0.71	1618	11.86*	Monoterp. alcohol
Terpinen-4-ol	8.84	1188	0.13	0.31	1522	8.71*	Monoterp. alcohol
α -Terpineol	9.51	1207	0.08	[0.71]	1618	11.86*	Monoterp. alcohol
Thymol	15.12	1322	0.09	0.12	2101	38.06	Monoterp. alcohol
β -Caryophyllene	20.68	1405	0.17	[0.31]	1522	8.71*	Sesquiterpene
α -Humulene	23.49	1439	0.03	0.02	1583	10.61	Sesquiterpene
trans- β -Farnesene	24.63	1452	0.61	[0.71]	1618	11.86*	Sesquiterpene
Germacrene D	25.71	1465	0.07	0.07	1624	12.09	Sesquiterpene
δ -Cadinene	29.45	1512	0.09	0.09	1677	14.40	Sesquiterpene
Germacrene B	32.12	1549	0.08	0.07	1724	16.76	Sesquiterpene
Spathulenol	34.08	1577	0.69	0.69	2025	35.14	Sesquiterp. alcohol
Isospathulenol	37.10	1633	0.11	0.05	2154	39.66	Sesquiterp. alcohol
γ -Murolol	37.71	1647	0.03	0.02	2086	37.62	Sesquiterp. alcohol
α -Cadinol	38.15	1658	0.14	0.15	2126	38.85	Sesquiterp. alcohol
Total identified			98.57%	98.30%			

*: 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

Essential oil, Citrus x junce
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Report prepared for
Flowers Shining Everywhere Inc.

OTHER DATA

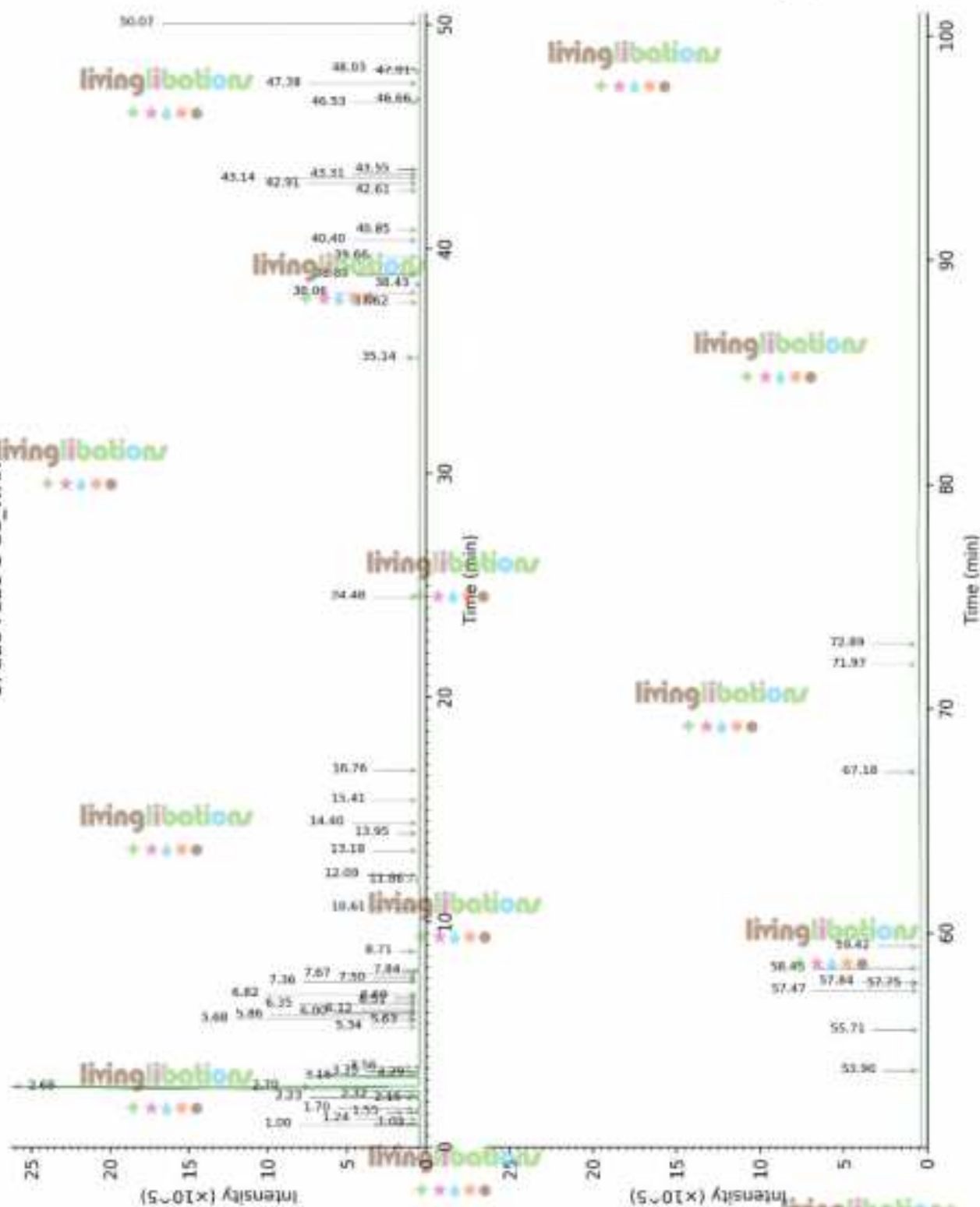
Physical aspect: Faintly yellow liquid

Refractive Index: 1.4738 ± 0.0003 (20 °C)

CONCLUSION

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

17G28-FSE1-1-CC_WAX



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Essential oil, Citrus x juncea
Internal Code: 17G28-FSE1-1-CC

Customer Identification:
Yuzu - Korea - 356673-2693

Report prepared for:
Flowers Shining Everywhere Inc.

