

Analysis Lemon Essential Oil

Laboratoire
PhytoChemia



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Date : December 9, 2016

SAMPLE IDENTIFICATION

Internal code : 16L05-FSE6-1-DM

Customer identification : Lemon Peel - Lot #7318

Type : Essential oil

Source : Citrus x limon

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).

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

Analysis date : 2016-12-07

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.	
Tricyclene	3.17	913	0.01	tr	926	0.78	Monoterpene
α -Thujene	3.26	918	0.41	2.25	946	0.86*	Monoterpene
α -Pinene	3.37	925	1.81	[2.25]	946	0.86*	Monoterpene
Camphene	3.65	942	0.05	0.05	996	1.07	Monoterpene
Sabinene	4.10	969	1.68	1.90	1056	1.50	Monoterpene
β -Pinene	4.19	975	10.51	10.45	1042	1.39	Monoterpene
Myrcene	4.44	990	1.57	1.77	1115	1.97*	Monoterpene
α -Phellandrene	4.70	1005	0.04	[1.77]	1115	1.97*	Monoterpene
Octanal	4.82	1012	0.07	0.09	1229	3.34	Aliphatic aldehyde
α -Terpinene	4.89	1016	0.17	[1.77]	1115	1.97*	Monoterpene
Limonene	5.27*	1037	68.87	68.28	1155	2.46	Monoterpene
para-Cymene	5.27*	1037	[68.87]	0.45	1208	3.05	Monoterpene
1,8-Cineole	5.27*	1037	[68.87]	0.42	1156	2.46	Monoterp. ether
<i>cis</i> - β -Ocimene	5.32	1040	0.09	8.72	1194	2.91*	Monoterpene
<i>trans</i> - β -Ocimene	5.49	1049	0.12	0.13	1204	3.01	Monoterpene
γ -Terpinene	5.72	1062	8.71	[8.72]	1194	2.91*	Monoterpene
Terpinolene	6.14	1084	0.38	0.34	1224	3.27	Monoterpene
Linalool	6.67	1108	0.14	0.11	1483	7.23	Monoterp. alcohol
Nonanal	6.72	1109	0.10	0.09	1335	4.82	Aliphatic aldehyde
<i>cis</i> -Limonene oxide	7.26	1130	0.01	0.01	1368	5.29	Monoterp. ether
<i>trans</i> -Limonene oxide	7.38	1134	0.01	0.01	1380	5.47	Monoterp. ether
Citronellal	7.88	1153	0.08	0.08	1413	5.95	Monoterp. aldehyde
Terpinen-4-ol	8.71	1184	0.04	0.14	1528	8.16*	Monoterp. alcohol
α -Terpineol	9.40	1204	0.14	0.14	1618	10.82	Monoterp. alcohol
Decanal	9.68	1211	0.04	0.03	1437	6.37	Aliphatic aldehyde
Nerol	10.28	1224	0.03	0.03	1720	15.20	Monoterp. alcohol
<i>trans</i> -Carveol	10.75	1235	0.04	0.02	1771	18.04	Monoterp. alcohol
Neral	11.07	1242	0.92	0.89	1592	10.04*	Monoterp. aldehyde
Geranial	12.61	1276	1.60	1.61	1645	11.90	Monoterp. aldehyde
Undecanal	14.53	1311	0.02	0.03	1541	8.54	Aliphatic aldehyde
Neryl acetate	17.71	1360	0.43	0.40	1654	12.31	Monoterp. ester
Geranyl acetate	19.18	1383	0.25	0.24	1685	13.63	Monoterp. ester
β -Caryophyllene	20.31	1399	0.22	[0.14]	1528	8.16*	Sesquiterpene
<i>trans</i> - α -Bergamotene	21.88	1418	0.32	0.30	1536	8.37	Sesquiterpene
α -Humulene	23.08	1433	0.01	[0.89]	1592	10.04*	Sesquiterpene
<i>trans</i> - β -Farnesene	24.23	1446	0.03	0.02	1612	10.63	Sesquiterpene
β -Bisabolene	28.56	1498	0.48	0.49	1664	12.74	Sesquiterpene
α -Bisabolol	39.44	1687	0.03	0.02	2137	38.13	Sesquiterp. alcohol
Citropten	48.06	1990	0.06				Coumarin

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

Oxypeucedanin	58.43	2480	0.05		Coumarin
Total identified		99.54%	99.51%		

*: 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 : 1.4720 ± 0.0003 (20 °C)

CONCLUSION

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

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