

GC/MS BATCH NUMBER: LM0100

ESSENTIAL OIL: LAVENDER FINE ORGANIC
BOTANICAL NAME: LAVANDULA ANGUSTIFOLIA
ORIGIN: FRANCE

KEY CONSTITUENTS PRESENT IN THIS BATCH OF LAVENDER FINE ORGANIC OIL	%
LINALYL ACETATE	34.0
LINALOOL	31.8
β -CARYOPHYLLENE	3.6
cis- β -OCIMENE	3.4
trans- β -OCIMENE	3.0
LAVANDULYL ACETATE	3.0
TERPINEN-4-OL	3.0
trans- β -FARNESENE	2.4
OCTAN-3-ONE	1.6
α -TERPINEOL	1.1

Comments from Robert Tisserand: Has a very fine Lavender fragrance. Conforms to 11 of 13 key ISO constituents for "spontaneous lavender". The other 2 probably do conform, but not clear from the analysis.

Date : September 9, 2016

SAMPLE IDENTIFICATION

Internal code : 16H30-PTH5-1-DM

Customer identification : Org Lavender Fine - LM0100511R

Type : Essential oil

Source : *Lavandula angustifolia*

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 : 2016-08-30

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.	
Isovaleral	0.53	567	0.01	0.02	778	0.49	Aliphatic aldehyde
Hexanal	1.81	811	0.02	0.02	1007	1.11	Aliphatic aldehyde
Methyl hexyl ether	1.88	817	0.09	0.08	847	0.60	Aliphatic ether
cis-Hex-3-en-1-ol	2.49	864	0.08	0.08	1321	4.61	Aliphatic alcohol
Hexanol	2.70	881	0.14	0.15	1293	4.22	Aliphatic alcohol
Tricyclene	3.16	913	0.02	0.02	927	0.79	Monoterpene
α -Thujene	3.25	918	0.07	0.07	953	0.89	Monoterpene
α -Pinene	3.35	924	0.16	0.15	945	0.86	Monoterpene
Camphene	3.64	941	0.16	0.14	997	1.08	Monoterpene
Sabinene	4.07	968	0.04	0.03	1055	1.49	Monoterpene
β -Pinene	4.13	971	0.06	0.05	1038	1.36	Monoterpene
Myrcene	4.41	988	0.59	0.53	1115	1.98	Monoterpene
Octan-3-one	4.46	991	1.55	1.40	1197	2.94*	Aliphatic ketone
Octen-3-ol	4.51	994	0.34	0.33	1398	5.73	Aliphatic alcohol
Butyl butyrate	4.63	1001	0.10				Aliphatic ester
Δ 3-Carene	4.68*	1004	0.13	0.10	1088	1.75	Monoterpene
α -Phellandrene	4.68*	1004	[0.13]	0.02	1107	1.91	Monoterpene
Octan-3-ol	4.77	1009	0.27	0.30	1347	5.00	Aliphatic alcohol
Hexyl acetate	4.94	1018	0.45	0.53	1221	3.23*	Aliphatic ester
α -Terpinene	4.97	1020	0.04	0.04	1121	2.05	Monoterpene
meta-Cymene	5.06	1025	0.15	0.27	1139	2.26*	Monoterpene
para-Cymene	5.09*	1027	0.34	0.37	1207	3.05	Monoterpene
Limonene	5.09*	1027	[0.34]	[0.27]	1139	2.26*	Monoterpene
β -Phellandrene	5.09*	1027	[0.34]	0.86	1143	2.32*	Monoterpene
1,8-Cineole	5.15	1030	0.82	[0.86]	1143	2.32*	Monoterp. ether
cis- β -Ocimene	5.29	1038	3.35	3.42	1186	2.81	Monoterpene
trans- β -Ocimene	5.47	1048	3.02	3.07	1203	3.00	Monoterpene
γ -Terpinene	5.64	1057	0.11	[1.40]	1197	2.94*	Monoterpene
cis-Linalool oxide (fur.)	5.94	1073	0.19	0.20	1377	5.42	Monoterp. alcohol
cis-Sabinene hydrate	6.00	1076	0.05	0.09	1407	5.86	Monoterp. alcohol
Terpinolene	6.11	1082	0.09	[0.53]	1221	3.23*	Monoterpene
trans-Linalool oxide (fur.)	6.25	1090	0.16	0.12	1405	5.83	Monoterp. alcohol
Linalool	6.78*	1112	32.74	66.53	1499	7.54*	Monoterp. alcohol
Octen-3-yl acetate	6.78*	1112	[32.74]	0.96	1332	4.77	Aliphatic ester
Octan-3-yl acetate	6.97	1119	0.16	0.22	1297	4.29	Aliphatic ester
Camphor	7.67	1145	0.37	0.29	1423	6.10	Monoterp. ketone
Lavandulol	8.33	1170	0.93	0.92	1613	10.66	Monoterp. alcohol
Borneol	8.61	1180	0.94	0.93	1619	10.86	Monoterp. alcohol
Terpinen-4-ol	8.72	1184	2.98	6.75	1533	8.27*	Monoterp. alcohol
Hexyl butyrate	9.05*	1196	0.51	0.34	1372	5.35	Aliphatic ester
Cryptone	9.05*	1196	[0.51]	0.26	1565	9.25	Monoterp. ketone

para-Cymen-8-ol	9.16	1199	0.09	0.11	1766	17.72	Monoterp. alcohol
α-Terpineol	9.38	1204	1.14	1.93	1625	11.06*	Monoterp. alcohol
Nerol	10.64*	1232	0.24	0.20	1732	15.75	Monoterp. alcohol
Bornyl formate	10.64*	1232	[0.24]	0.03	1462	6.84	Monoterp. ester
Hexyl 2-methylbutyrate	10.64*	1232	[0.24]				Aliphatic ester
Linalyl acetate	11.47*	1251	34.06	[66.53]	1499	7.54*	Monoterp. ester
Cuminal	11.47*	1251	[34.06]	0.06	1674	13.17	Monoterp. aldehyde
Geraniol	11.86	1260	0.51	0.50	1783	18.68	Monoterp. alcohol
Bornyl acetate	12.74	1279	0.11	0.24	1511	7.77	Monoterp. ester
Lavandulyl acetate	13.10	1287	2.98	2.93	1551	8.85	Monoterp. ester
Neryl acetate	17.65	1359	0.33	0.31	1662	12.62*	Monoterp. ester
Geranyl acetate	19.14	1382	0.61	0.57	1693	13.99	Monoterp. ester
β-Caryophyllene	20.30	1399	3.59	[6.75]	1533	8.27*	Sesquiterpene
α-Santalene	20.64	1403	0.43	0.47	1521	7.95	Sesquiterpene
<i>trans</i> -α-Bergamotene	21.81	1417	0.13	[6.75]	1533	8.27*	Sesquiterpene
α-Humulene	23.00	1432	0.09	0.09	1587	9.90	Sesquiterpene
<i>trans</i> -β-Farnesene	24.24	1447	2.35	1.92	1627	11.14	Sesquiterpene
Germacrene D	25.22	1458	0.46	[1.93]	1625	11.06*	Sesquiterpene
γ-Cadinene	28.25	1494	0.09	0.08	1672	13.08	Sesquiterpene
β-Bisabolene	28.44	1497	0.03	[0.31]	1662	12.62*	Sesquiterpene
Caryophyllene oxide	33.49	1566	0.33	0.29	1854	22.99	Sesquiterp. ether
τ-Cadinol	37.32	1637	0.07	0.08	2080	36.21	Sesquiterp. alcohol
Total identified			98.87%	99.47%			

*: 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 : Clear liquid

Refractive index : 1.4588 ± 0.0003 (20 °C)

CONCLUSION

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



