



GC/MS BATCH NUMBER: L40108

ESSENTIAL OIL: LAVENDER

BOTANICAL NAME: LAVANDULA ANGUSTIFOLIA

ORIGIN: FRANCE

KEY CONSTITUENTS PRESENT IN THIS BATCH OF LAVENDER OIL	%
LINALYL ACETATE	41.8
LINALOOL	41.3
β -CARYOPHYLLENE	3.2
OCTAN-3-ONE	2.1
CIS-B-OCIMENE	1.2

Comments from Robert Tisserand: Beautiful floral-powdery odor quality. All thirteen key ISO constituents are within range for Lavender "Maillette" (French clonal).

Date : September 28, 2017

SAMPLE IDENTIFICATION

Internal code : 17118-PTH7-1-DM

Customer identification : Lavender - France - L4010876R

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 : Benoit Roger Ph. D.

Analysis date : 2017-09-25

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.	
Hexan-2-ol	1.85	816	0.01				Aliphatic alcohol
Methyl hexyl ether	1.93	822	0.02	0.02	842	0.81	Aliphatic ether
<i>cis</i> -Hex-3-en-1-ol	2.50	865	0.01	0.01	1318	5.54	Aliphatic alcohol
Hexanol	2.72	882	0.02	0.05	1296	5.19	Aliphatic alcohol
Tricyclene	3.22	915	0.01	tr	913	1.08	Monoterpene
α -Thujene	3.31	920	0.02	0.05	948	1.23	Monoterpene
α -Pinene	3.41	926	0.06	0.03	936	1.18	Monoterpene
Camphene	3.70	943	0.34	0.26	989	1.48	Monoterpene
Sabinene	4.13	969	0.02	tr	1051	2.00	Monoterpene
β -Pinene	4.20	972	0.04	0.03	1034	1.85	Monoterpene
Myrcene	4.47	989	0.30	0.27	1111	2.62*	Monoterpene
Octan-3-one	4.52*	991	1.39	2.11	1198	3.73*	Aliphatic ketone
Octen-3-ol	4.52*	991	[1.39]	0.13	1396	6.80	Aliphatic alcohol
Butyl butyrate	4.69	1001	0.05				Aliphatic ester
Δ 3-Carene	4.75	1005	0.08	0.07	1089	2.34	Monoterpene
Octan-3-ol	4.80	1007	0.04	0.06	1342	5.91	Aliphatic alcohol
α -Terpinene	4.94	1015	0.01	[0.27]	1111	2.62*	Monoterpene
Hexyl acetate	4.99	1018	0.56	0.59	1221	4.07*	Aliphatic ester
para-Cymene	5.13	1025	0.08	[2.11]	1198	3.73*	Monoterpene
Limonene	5.17	1027	0.15	0.76	1140	3.00*	Monoterpene
β -Phellandrene	5.20	1029	0.09	[0.76]	1140	3.00*	Monoterpene
1,8-Cineole	5.23	1030	0.52	[0.76]	1140	3.00*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.35	1037	1.23	1.19	1181	3.57*	Monoterpene
<i>trans</i> - β -Ocimene	5.53	1047	0.68	[2.11]	1198	3.73*	Monoterpene
γ -Terpinene	5.72	1057	0.02	[1.19]	1181	3.57*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	6.00	1072	0.14	0.13	1373	6.42	Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	6.06	1076	0.04	0.21	1401	6.92*	Monoterp. alcohol
Terpinolene	6.19	1083	0.03	[0.59]	1221	4.07*	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.32	1090	0.16	[0.21]	1401	6.92*	Monoterp. alcohol
Linalool	6.86*	1112	41.86	41.30	1498	9.30*	Monoterp. alcohol
Octen-3-yl acetate	6.86*	1112	[41.86]	0.36	1329	5.70	Aliphatic ester
Octan-3-yl acetate	7.06	1119	0.03	0.03	1290	5.09	Aliphatic ester
<i>cis</i> -para-Menth-2-en-1-ol	7.19	1124	0.01	[41.30]	1498	9.30*	Monoterp. alcohol
Camphor	7.79	1146	0.59	0.58	1420	7.36	Monoterp. ketone
Lavandulol	8.36	1167	0.13	0.11	1609	13.63	Monoterp. alcohol
Borneol	8.65	1177	0.65	1.07	1613	13.80*	Monoterp. alcohol
Terpinen-4-ol	8.82	1183	0.66	0.86	1523	10.22	Monoterp. alcohol
Hexyl butyrate	9.20*	1197	0.68	0.58	1365	6.28	Aliphatic ester
Cryptone	9.20*	1197	[0.68]	0.07	1558	11.52	Monoterp. ketone
α -Terpineol	9.51	1204	0.75	1.01	1617	14.02*	Monoterp. alcohol
Nerol	10.70	1230	0.12	0.14	1723	20.03	Monoterp. alcohol

Linalyl acetate	11.67	1252	41.79	42.72	1507	9.64*	Monoterp. ester
Geraniol	11.88	1256	0.27	0.28	1774	23.47	Monoterp. alcohol
Bornyl acetate	12.94	1280	0.05	[42.72]	1507	9.64*	Monoterp. ester
Lavandulyl acetate	13.23	1286	0.50	0.48	1545	11.05	Monoterp. ester
α -Cubebene	16.00	1331	0.01	[0.21]	1401	6.92*	Sesquiterpene
Neryl acetate	17.87	1360	0.23	0.24	1655	16.05*	Monoterp. ester
Geranyl acetate	19.37	1382	0.43	0.46	1687	17.79	Monoterp. ester
Hexyl hexanoate	19.84	1389	0.01	0.06	1579	12.30*	Aliphatic ester
β -Caryophyllene	20.66	1401	3.16	2.96	1520	10.11*	Sesquiterpene
α -Santalene	20.97	1405	0.21	0.20	1513	9.82	Sesquiterpene
<i>trans</i> - α -Bergamotene	22.15	1419	0.05	[2.96]	1520	10.11*	Sesquiterpene
α -Humulene	23.39	1433	0.05	[0.06]	1579	12.30*	Sesquiterpene
<i>trans</i> - β -Farnesene	24.52	1447	0.41	[1.07]	1613	13.80*	Sesquiterpene
Germacrene D	25.61	1460	0.18	[1.01]	1617	14.02*	Sesquiterpene
γ -Cadinene	28.69	1497	0.02	[0.24]	1655	16.05*	Sesquiterpene
δ -Cadinene	29.17	1503	0.04	0.04	1665	16.58	Sesquiterpene
Caryophyllene oxide	33.82	1569	0.23	0.17	1839	28.08	Sesquiterp. ether
τ -Cadinol	37.53	1638	0.02	0.04	2062	39.14	Sesquiterp. alcohol
Total identified			99.26%	99.73%			

*: 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 : 1.4568 \pm 0.0003 (20 °C)

CONCLUSION

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

17118-PTH7-1-DM_BP5



