

Date : September 22, 2017

SAMPLE IDENTIFICATION

Internal code : 17112-NGA2-1-DM

Customer identification : Lavender Bulgarian - Batch # BU-58614

Type : Essential oil

Source : *Lavandula angustifolia*

Customer : Nature's Gift Aromatherapy

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 : 2017-09-15

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.	
Methyl hexyl ether	1.92	821	0.07	0.06	842	0.81	Aliphatic ether
cis-Hex-3-en-1-ol	2.50	865	0.02	0.02	1321	5.59	Aliphatic alcohol
Hexanol	2.70	880	0.08	0.15	1297	5.20	Aliphatic alcohol
Tricyclene	3.22	915	0.02	0.02	913	1.08	Monoterpene
α-Thujene	3.31	920	0.08	0.28	949	1.24†	Monoterpene
α-Pinene	3.41	926	0.21	[0.28]	938	1.19†	Monoterpene
Camphene	3.70	943	0.20	0.15	989	1.49	Monoterpene
Sabinene	4.13	969	0.06	0.05	1056	2.03	Monoterpene
β-Pinene	4.20	972	0.06	0.04	1035	1.86	Monoterpene
Myrcene	4.48	989	0.57	0.52	1111	2.63*	Monoterpene
Octan-3-one	4.52*	991	1.62	4.17	1203	3.80+*	Aliphatic ketone
Octen-3-ol	4.52*	991	[1.62]	0.18	1396	6.81	Aliphatic alcohol
Butyl butyrate	4.69	1001	0.10				Aliphatic ester
Δ3-Carene	4.75	1005	0.16	0.12	1090	2.35	Monoterpene
Octan-3-ol	4.79	1007	0.20	0.27	1342	5.92	Aliphatic alcohol
Hexyl acetate	5.00	1018	0.51	0.57	1221	4.07*	Aliphatic ester
meta-Cymene	5.04	1020	0.04	[0.52]	1111	2.63*	Monoterpene
para-Cymene	5.13	1025	0.17	[4.17]	1200	3.75+*	Monoterpene
Limonene	5.17	1027	0.41	1.58	1138	2.96†	Monoterpene
β-Phellandrene	5.20	1029	0.48	[1.58]	1142	3.02+*	Monoterpene
1,8-Cineole	5.23	1030	0.73	[1.58]	1142	3.02+*	Monoterp. ether
cis-β-Ocimene	5.36	1038	4.49	4.33	1183	3.59	Monoterpene
trans-β-Ocimene	5.54	1047	2.55	[4.17]	1203	3.80+*	Monoterpene
γ-Terpinene	5.72	1057	0.10	[4.17]	1200	3.75+*	Monoterpene
cis-Linalool oxide (fur.)	6.00	1072	0.06	0.06	1374	6.43	Monoterp. alcohol
cis-Sabinene hydrate	6.06	1076	0.07	0.13	1401	6.93*	Monoterp. alcohol
Terpinolene	6.20	1083	0.07	[0.57]	1221	4.07*	Monoterpene
trans-Linalool oxide (fur.)	6.32	1090	0.05	[0.13]	1401	6.93*	Monoterp. alcohol
Linalool	6.82*	1111	30.14	62.35	1497	9.27†	Monoterp. alcohol
Octen-3-yl acetate	6.82*	1111	[30.14]	0.83	1329	5.71	Aliphatic ester
Octan-3-yl acetate	7.05	1119	0.17	0.17	1290	5.10	Aliphatic ester
cis-para-Menth-2-en-1-ol	7.24	1126	0.04	[62.35]	1506	9.59+*	Monoterp. alcohol
trans-para-Menth-2-en-1-ol	7.62	1140	0.02	0.34	1558	11.53*	Monoterp. alcohol
Hexyl isobutyrate	7.76	1145	0.03				Aliphatic ester
Camphor	7.78	1146	0.20	0.21	1420	7.36	Monoterp. ketone
Lavandulol	8.37	1167	0.92	0.74	1610	13.66	Monoterp. alcohol
Borneol	8.66	1177	0.66	1.38	1616	14.00*	Monoterp. alcohol
Terpinen-4-ol	8.84	1184	2.81	3.21	1525	10.27*	Monoterp. alcohol
Hexyl butyrate	9.18*	1196	0.64	0.29	1365	6.28	Aliphatic ester
Cryptone	9.18*	1196	[0.64]	[0.34]	1558	11.53*	Monoterp. ketone

α-Terpineol	9.49	1204	0.99	[1.38]	1616	14.00*	Monoterp. alcohol
Bornyl formate	10.37	1223	0.05	0.04	1450	8.09	Monoterp. ester
Nerol	10.66	1229	0.18	0.19	1724	20.05	Monoterp. alcohol
Linalyl acetate	11.62	1251	32.78	[62.35]	1506	9.59†*	Monoterp. ester
Geraniol	11.87	1256	0.44	0.48	1775	23.51	Monoterp. alcohol
Geranial	12.93	1279	0.21	0.39	1655	16.06*	Monoterp. aldehyde
Lavandulyl acetate	13.28	1287	4.15	4.27	1547	11.11	Monoterp. ester
α-Cubebene	15.99	1331	0.04	[0.13]	1401	6.93*	Sesquiterpene
Neryl acetate	17.86	1359	0.30	[0.39]	1655	16.06*	Monoterp. ester
β-Elemene	18.90	1375	0.11	[3.21]	1525	10.27*	Sesquiterpene
Geranyl acetate	19.36	1382	0.51	0.57	1688	17.81	Monoterp. ester
Hexyl hexanoate	19.84	1389	0.06	0.15	1579	12.31*	Aliphatic ester
β-Caryophyllene	20.67	1401	4.43	4.08	1520	10.10	Sesquiterpene
α-Santalene	20.98	1405	0.45	0.51	1512	9.81	Sesquiterpene
<i>trans</i> -α-Bergamotene	22.15	1419	0.12	[3.21]	1525	10.27*	Sesquiterpene
α-Humulene	23.38	1433	0.11	[0.15]	1579	12.31*	Sesquiterpene
9-epi-β-Caryophyllene	24.07*	1442	0.13	0.28	1665	16.60*	Sesquiterpene
Coumarin	24.07*	1442	[0.13]	0.06	2258	44.33	Coumarin
<i>trans</i> -β-Farnesene	24.59	1448	3.67	5.01	1614	13.86*	Sesquiterpene
Germacrene D	25.62	1460	0.64	[5.01]	1614	13.86*	Sesquiterpene
Viridiflorene	26.25	1468	0.06	[5.01]	1614	13.86*	Sesquiterpene
γ-Cadinene	28.67	1496	0.11	[0.28]	1665	16.60*	Sesquiterpene
β-Bisabolene	28.83	1498	0.04	[0.28]	1665	16.60*	Sesquiterpene
Caryophyllene oxide	33.80	1568	0.33	0.32	1839	28.08	Sesquiterp. ether
τ-Cadinol	37.50	1637	0.08	0.10	2063	39.15	Sesquiterp. alcohol
Total identified				98.8%	98.67%		

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

†: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

Note: no correction factor was applied

OTHER DATA

Physical aspect : Clear liquid

Refractive index : 1.4605 ± 0.0003 (20 °C)

CONCLUSION

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

17112-NGA2-1-DM_BP5



