



**PLANT THERAPY**  
100% PURE ESSENTIAL OILS

## GC/MS BATCH NUMBER: L40106

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**ESSENTIAL OIL:** LAVENDER  
**BOTANICAL NAME:** LAVANDULA ANGUSTIFOLIA  
**ORIGIN:** SPAIN

KEY CONSTITUENTS PRESENT IN THIS BATCH OF LAVENDER OIL	%
LINALYL ACETATE	34.6
LINALOOL	33.5
TERPINEN-4-OL	4.0
$\beta$ -CARYOPHYLLENE	3.8
CIS- $\beta$ -OCIMENE	3.1
LAVANDULYL ACETATE	2.7
TRANS- $\beta$ -OCIMENE	2.6
BORNEOL	1.3
$\alpha$ -TERPINEOL	1.2

Comments from Robert Tisserand: Excellent powdery-floral odor quality. There is no ISO for Spanish Lavender, but this very nearly meets the ISO for wild French Lavender.

**Date :** February 22, 2017

*SAMPLE IDENTIFICATION*

**Internal code :** 17B13-PTH5-1-DM

**Customer identification :** Lavender - Spain - L4010667R

**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).

**Analyst :** Sylvain Mercier, M. Sc., chimiste

**Analysis date :** 2017-02-22

Checked and approved by :



Sylvain Mercier, M. Sc., chimiste 2014-005

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IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Methyl hexyl ether	2.02	822	0.01	0.01	847	0.81	Aliphatic ether
<i>cis</i> -Hex-3-en-1-ol	2.54	862	0.04	0.03	1325	5.76	Aliphatic alcohol
Hexanol	2.76	879	0.04	0.06	1301	5.37	Aliphatic alcohol
Tricyclene	3.31	915	0.01	0.01	928	1.15	Monoterpene
$\alpha$ -Thujene	3.40	920	0.03	0.02	965	1.31	Monoterpene
$\alpha$ -Pinene	3.50	926	0.24	0.22	954	1.26	Monoterpene
Camphene	3.79	943	0.12	0.10	997	1.57	Monoterpene
Sabinene	4.22	968	0.02	0.01	1058	2.12	Monoterpene
$\beta$ -Pinene	4.28	972	0.24	0.22	1039	1.95	Monoterpene
Octen-3-ol	4.52	986	0.21	0.48	1398	6.98*	Aliphatic alcohol
Myrcene	4.55	988	0.35	0.32	1117	2.72	Monoterpene
Octan-3-one	4.59	991	0.61	0.53	1201	3.85	Aliphatic ketone
Butyl butyrate	4.78	1001	0.07				Aliphatic ester
Octan-3-ol	4.82	1003	0.09	0.09	1344	6.06	Aliphatic alcohol
$\alpha$ -Terpinene	5.02	1014	tr	tr	1124	2.81	Monoterpene
Hexyl acetate	5.09	1018	0.06	0.23	1224	4.20*	Aliphatic ester
<i>para</i> -Cymene	5.19	1024	0.24	0.23	1210	3.99	Monoterpene
Limonene	5.24	1026	0.80	0.77	1142	3.05	Monoterpene
$\beta$ -Phellandrene	5.27	1028	0.01	0.90	1148	3.13*	Monoterpene
1,8-Cineole	5.31	1030	0.89	[0.90]	1148	3.13*	Monoterp. ether
<i>cis</i> - $\beta$ -Ocimene	5.43	1037	3.08	3.12	1189	3.68*	Monoterpene
<i>trans</i> - $\beta$ -Ocimene	5.61	1046	2.62	2.63	1204	3.89	Monoterpene
$\gamma$ -Terpinene	5.79	1056	0.13	[3.12]	1189	3.68*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	6.06	1071	0.07	0.14	1378	6.62	Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	6.09	1073	0.05	0.03	1420	7.52	Monoterp. alcohol
Terpinolene	6.27	1083	0.21	[0.23]	1224	4.20*	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.39	1089	0.07	[0.48]	1398	6.98*	Monoterp. alcohol
Linalool	6.84	1106	33.47	33.69	1500	9.60	Monoterp. alcohol
Octen-3-yl acetate	6.91	1109	0.37	0.36	1329	5.81	Aliphatic ester
Octan-3-yl acetate	7.30	1123	0.04	0.03	1296	5.29	Aliphatic ester
Camphor	7.86	1144	0.61	0.58	1422	7.59*	Monoterp. ketone
Lavandulol	8.41	1164	0.61	1.24	1610	14.03*	Monoterp. alcohol
Borneol	8.64	1172	1.25	1.56	1616	14.34*	Monoterp. alcohol
Terpinen-4-ol	8.88	1181	3.97	3.89	1528	10.65	Monoterp. alcohol
Cryptone	9.31	1195	0.05	0.08	1573	12.37	Monoterp. ketone
Hexyl butyrate	9.36	1196	0.23	0.21	1364	6.39	Aliphatic ester
$\alpha$ -Terpineol	9.47	1198	1.24	1.24	1621	14.60	Monoterp. alcohol
Nerol	10.66	1225	0.17	0.19	1727	20.71	Monoterp. alcohol
Neral	11.36	1241	0.28	[1.24]	1610	14.03*	Monoterp. aldehyde
Linalyl acetate	11.82	1251	34.61	35.28	1506	9.84	Monoterp. ester
Geraniol	11.93	1253	0.25	0.24	1779	24.24	Monoterp. alcohol

Lavandulyl acetate	13.47	1287	2.74	2.79	1547	11.37	Monoterp. ester
α-Cubebene	16.21	1330	0.08	0.13	1404	7.14	Sesquiterpene
α-Terpinyll acetate	16.81	1339	0.12	0.09	1629	15.03	Monoterp. ester
α-Copaene	17.96	1357	0.04	[0.58]	1422	7.59*	Sesquiterpene
Neryl acetate	18.11	1359	0.54	0.45	1655	16.46	Monoterp. ester
β-Elemene	19.20	1376	0.08	3.72	1519	10.32*	Sesquiterpene
Geranyl acetate	19.63	1382	0.83	0.99	1689	18.23*	Monoterp. ester
Hexyl hexanoate	20.02	1388	0.16	0.09	1555	11.68	Aliphatic ester
Sesquithujene	20.42	1394	0.07	0.26	1510	9.96*	Sesquiterpene
β-Caryophyllene	20.92	1400	3.75	[3.72]	1519	10.32*	Sesquiterpene
α-Santalene	21.26	1404	0.17	[0.26]	1510	9.96*	Sesquiterpene
Aromadendrene	22.47	1418	0.13	0.12	1522	10.44	Sesquiterpene
α-Humulene				0.11	1578	12.56	Sesquiterpene
<i>trans</i> -β-Farnesene	24.83	1447	0.65	[1.24]	1610	14.03*	Sesquiterpene
γ-Murolene	25.19	1451	0.04	0.04	1605	13.76	Sesquiterpene
Germacrene D	25.85	1459	0.44	[1.56]	1616	14.34*	Sesquiterpene
γ-Cadinene	28.87	1496	0.22	0.16	1661	16.77	Sesquiterpene
β-Bisabolene	29.12	1499	0.11	0.11	1650	16.20	Sesquiterpene
( <i>E,E</i> )-α-Farnesene	29.39	1503	0.07	[0.99]	1689	18.23*	Sesquiterpene
δ-Cadinene	29.55	1505	0.20	[0.99]	1689	18.23*	Sesquiterpene
Caryophyllene oxide	33.90	1566	0.13	0.10	1842	28.78	Sesquiterp. ether
<b>Total identified</b>				<b>98.03%</b>	<b>97.90%</b>		

\*: 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 :** Light yellow liquid

**Refractive index :** 1.4610 ± 0.0003 (20 °C)

#### CONCLUSION

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



