



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: CF0106

ESSENTIAL OIL: CLARY SAGE
BOTANICAL NAME: SALVIA SCLAREA
ORIGIN: FRANCE

KEY CONSTITUENTS PRESENT IN THIS BATCH OF CLARY SAGE OIL	%
LINALYL ACETATE	56.7
LINALOOL	22.4
α -TERPINEOL	4.4
GERANYL ACETATE	2.4
GERANIOL	2.0
β -CARYOPHYLLENE	1.7
NERYL ACETATE	1.3
MYRCENE	1.2
GERMACRENE D	1.1
trans- β -OCIMENE	1.0
NEROL	1.0

Comments from Robert Tisserand: Excellent musky odor profile. Meets 4 of 5 ISO standards with germacrene D slightly low - not a concern.

Date : April 7, 2017

SAMPLE IDENTIFICATION

Internal code : 17C29-PTH4-1-DM

Customer identification : Clary sage - France - CF010667R

Type : Essential oil

Source : *Salvia sclarea*

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 : 2017-04-04

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.	
<i>cis</i> -Hex-3-en-1-ol	2.46	864	0.03	0.02	1320	5.47	Aliphatic alcohol
<i>trans</i> -Hex-2-en-1-ol	2.63	876	0.02	0.03	1344	5.84	Aliphatic alcohol
Hexanol	2.69	881	0.02	0.02	1297	5.09	Aliphatic alcohol
α -Pinene	3.40	928	0.08	0.08	939	1.14	Monoterpene
Camphene	3.69	945	0.01	0.01	995	1.43	Monoterpene
Sabinene	4.12	970	0.01	0.01	1053	1.95	Monoterpene
β -Pinene	4.18	974	0.06	0.05	1035	1.78	Monoterpene
Myrcene	4.45*	990	1.25	1.17	1113	2.52	Monoterpene
Octen-3-ol	4.45*	990	[1.25]	0.15	1403	6.77*	Aliphatic alcohol
<i>trans</i> -Dehydroxylinalool oxide	4.45*	990	[1.25]	0.03	1150	3.02	Monoterp. ether
Pseudolimonene	4.67	1003	0.07	0.06	1108	2.46	Monoterpene
α -Terpinene	4.91	1016	tr	0.01	1118	2.60	Monoterpene
para-Cymene	5.09	1026	0.01	0.01	1204	3.73	Monoterpene
Limonene	5.14	1028	0.30	0.29	1136	2.83	Monoterpene
<i>cis</i> - β -Ocimene	5.32	1039	0.63	0.62	1182	3.43*	Monoterpene
<i>trans</i> - β -Ocimene	5.50	1048	0.96	0.92	1198	3.64	Monoterpene
γ -Terpinene	5.68	1059	0.01	[0.62]	1182	3.43*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	5.95	1073	0.04	0.04	1373	6.28	Monoterp. alcohol
Terpinolene	6.16	1084	0.10	0.09	1219	3.95	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.26	1090	0.10	[0.15]	1403	6.77*	Monoterp. alcohol
Linalool	6.69*	1109	22.84	22.39	1496	8.97	Monoterp. alcohol
Hotrienol	6.69*	1109	[22.84]	0.04	1534	10.25	Monoterp. alcohol
1-Terpineol	7.46	1137	0.03	0.02	1515	9.50	Monoterp. alcohol
Borneol	8.45	1174	0.03	1.11	1616	13.38*	Monoterp. alcohol
Terpinen-4-ol	8.66	1181	0.01	0.02	1526	9.94	Monoterp. alcohol
α -Terpineol	9.31	1203	4.42	4.39	1622	13.69	Monoterp. alcohol
Linalyl formate	9.73	1212	0.14				Monoterp. ester
Nerol	10.48	1229	1.00	0.93	1727	19.39	Monoterp. alcohol
Neral	11.11	1243	0.06	0.06	1599	12.65	Monoterp. aldehyde
Linalyl acetate	11.61	1254	56.66	57.43	1509	9.31	Monoterp. ester
Geraniol	11.72	1256	2.04	2.00	1779	22.81	Monoterp. alcohol
Geranial	12.54	1275	0.02	0.02	1645	14.89	Monoterp. aldehyde
Geranyl formate	13.89	1303	0.04	0.03	1632	14.21	Monoterp. ester
α -Cubebene	15.85	1333	0.02	0.02	1419	7.13	Sesquiterpene
α -Copaene	17.53	1358	0.33	0.34	1427	7.32	Sesquiterpene
Neryl acetate	17.69	1361	1.30	1.31	1655	15.43	Monoterp. ester
β -Bourbonene	17.95	1365	0.05	0.05	1447	7.80	Sesquiterpene
β -Elemene	18.70	1376	0.07	1.82	1519	9.69*	Sesquiterpene
Geranyl acetate	19.20	1384	2.37	2.40	1688	17.13*	Monoterp. ester
β -Caryophyllene	20.40	1402	1.68	[1.82]	1519	9.69*	Sesquiterpene

α-Humulene	23.12	1434	0.11	0.11	1575	11.75	Sesquiterpene
Germacrene D	25.32	1461	1.08	[1.11]	1616	13.38*	Sesquiterpene
Bicyclogermacrene	26.53	1475	0.18	0.15	1635	14.38	Sesquiterpene
γ-Cadinene	28.32	1497	0.02	0.01	1661	15.74	Sesquiterpene
(E,E)-α-Farnesene	28.81	1503	0.03	[2.40]	1688	17.13*	Sesquiterpene
δ-Cadinene	28.99	1506	0.08	0.08	1667	16.02	Sesquiterpene
Caryophyllene oxide	33.47*	1568	0.14	0.07	1842	27.18	Sesquiterp. ether
Spathulenol	33.47*	1568	[0.14]	0.04	2014	36.98	Sesquiterp. alcohol
β-Eudesmol	37.51	1643	0.03	0.03	2107	39.95	Sesquiterp. alcohol
α-Eudesmol	37.73	1648	0.02	0.01	2120	40.36	Sesquiterp. alcohol
Sclareoloxide	44.69	1861	0.06	0.06	2089	39.38	Diterp. ether
Manoyl oxide	47.49	1969	0.05	0.05	2194	42.27	Diterp. ether
13-epi-Manoyl oxide	47.97	1989	0.03	0.04	2205	42.56	Diterp. ether
Manool	49.15	2039	0.06	0.08	2541	49.81	Diterp. alcohol
Sclareol	52.90	2207	0.61	0.65	2982	57.65	Diterp. alcohol
Total identified			99.31%	99.37%			

*: 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 : Faintly yellow liquid

Refractive index : 1.4575 ± 0.0003 (20 °C)

CONCLUSION

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



