

Date : February 5, 2018

SAMPLE IDENTIFICATION

Internal code : 18A23-ALZ1-1-CC

Customer identification : Clary Sage

Type : Essential oil

Source : *Salvia sclarea*

Customer : Aliz

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 : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2018-01-26

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	0.67	674	0.02	0.02	776	0.59	Aliphatic aldehyde
2-Methylbutyral	0.70	678	0.02	0.02	768	0.58	Aliphatic aldehyde
(2E)-Hexenal	2.45	861	0.06				Aliphatic aldehyde
cis-Hex-3-en-1-ol	2.51	865	0.02	0.02	1333	5.20	Aliphatic alcohol
trans-Hex-2-en-1-ol	2.66	877	0.04	0.05	1358	5.56	Aliphatic alcohol
Hexanol	2.73	882	0.02	0.02	1308	4.82	Aliphatic alcohol
α-Thujene	3.31	920	tr	tr	957	1.05	Monoterpene
α-Pinene	3.42	926	0.11	0.11	945	1.01	Monoterpene
Camphene	3.71	943	0.03	0.03	999	1.26	Monoterpene
Sabinene	4.14	969	0.03	0.03	1063	1.73	Monoterpene
β-Pinene	4.20	972	0.13	0.13	1042	1.58	Monoterpene
Myrcene	4.48*	989	0.31	0.27	1118	2.26	Monoterpene
trans-Dehydroxylinalool oxide	4.48*	989	[0.31]	0.09	1158	2.76	Monoterp. ether
Octen-3-ol	4.53	992	0.04	0.06	1405	6.28	Aliphatic alcohol
para-Cymene	5.14	1025	0.01	0.01	1209	3.42	Monoterpene
Limonene	5.18	1027	0.16	0.15	1141	2.55	Monoterpene
β-Phellandrene	5.21	1029	tr	0.01	1148	2.63*	Monoterpene
1,8-Cineole	5.24	1030	0.01	[0.01]	1148	2.63*	Monoterp. ether
cis-β-Ocimene	5.36	1037	0.16	0.19	1185	3.13*	Monoterpene
trans-β-Ocimene	5.54	1047	0.23	0.23	1202	3.33	Monoterpene
γ-Terpinene	5.72	1057	0.06	[0.19]	1185	3.13*	Monoterpene
cis-Linalool oxide (fur.)	6.01	1072	0.01	0.01	1385	5.96	Monoterp. alcohol
cis-Sabinene hydrate	6.08	1076	0.01	0.01	1407	6.33*	Monoterp. alcohol
Terpinolene	6.21	1083	0.03	0.03	1222	3.61	Monoterpene
trans-Linalool oxide (fur.)	6.33	1090	0.01	[0.01]	1407	6.33*	Monoterp. alcohol
α-Linalool	6.79	1109	11.88	19.80	1507	8.38	Monoterp. alcohol
Borneol	8.68	1177	0.03	0.03	1624	12.39	Monoterp. alcohol
Terpinen-4-ol	8.83	1183	0.01	0.01	1530	9.11	Monoterp. alcohol
α-Terpineol	9.56	1205	0.46	0.47	1630	12.66*	Monoterp. alcohol
Linalyl formate	9.85	1211	0.71				Monoterp. ester
Nerol	10.83	1233	0.09	0.13	1737	18.06	Monoterp. alcohol
Linalyl acetate	11.80	1254	74.93	67.26	1516	8.68	Monoterp. ester
Geraniol	11.93	1257	0.24	0.27	1791	21.32	Monoterp. alcohol
Geranial	12.85	1277	0.02	0.01	1653	13.71	Monoterp. aldehyde
Geranyl formate	14.08	1302	0.04	0.54	1638	13.05*	Monoterp. ester
α-Cubebene	16.02	1331	0.03	0.03	1412	6.41	Sesquiterpene
α-Terpinyl acetate	16.62	1340	0.11	0.20	1622	12.28	Monoterp. ester
α-Copaene	17.76	1357	0.64	0.55	1429	6.77	Sesquiterpene
Neryl acetate	17.89	1359	0.18	0.17	1663	14.14*	Monoterp. ester
β-Bourbonene	18.17	1363	0.12	0.11	1451	7.20	Sesquiterpene

β-Cubebene	18.73	1372	0.18	0.16	1478	7.74	Sesquiterpene
β-Elemene	18.98	1375	0.05	2.19	1524	8.93*	Sesquiterpene
Geranyl acetate	19.39	1381	0.35	0.35	1696	15.69	Monoterp. ester
β-Caryophyllene	20.68	1400	1.43	[2.19]	1524	8.93*	Sesquiterpene
β-Copaene	21.58	1411	0.03	0.03	1522	8.86	Sesquiterpene
Aromadendrene	22.12	1417	0.03	[2.19]	1524	8.93*	Sesquiterpene
α-Humulene	23.45	1433	0.06	0.07	1580	10.69	Sesquiterpene
Germacrene D	25.77	1461	3.74	3.76	1620	12.20	Sesquiterpene
β-Selinene	26.36	1468	0.23	[0.47]	1630	12.66*	Sesquiterpene
Bicyclogermacrene	26.94	1475	0.52	[0.54]	1638	13.05*	Sesquiterpene
Valencene	27.86	1486	0.09	0.14	1661	14.06	Sesquiterpene
γ-Cadinene	28.78	1497	0.03	[0.17]	1663	14.14*	Sesquiterpene
(E,E)-α-Farnesene	29.15	1502	0.08	0.09	1691	15.47	Sesquiterpene
δ-Cadinene	29.41	1505	0.14	0.16	1671	14.53	Sesquiterpene
Caryophyllene oxide	33.87	1568	0.11	0.11	1849	25.27	Sesquiterp. ether
Spathulenol	34.05	1571	0.11	0.10	2024	35.85	Sesquiterp. alcohol
Cubanol	37.10	1626	0.09	0.06	1949	31.86	Sesquiterp. alcohol
Sclareoloxide	44.94	1862	0.06	0.04	2103	38.61	Diterp. ether
Manoyl oxide	47.73	1970	0.01	0.01	2186	40.92	Diterp. ether
Sclareol	53.28	2214	0.31	0.32	3004	56.88	Diterp. alcohol
Total identified			98.66%	98.66%			

*: 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

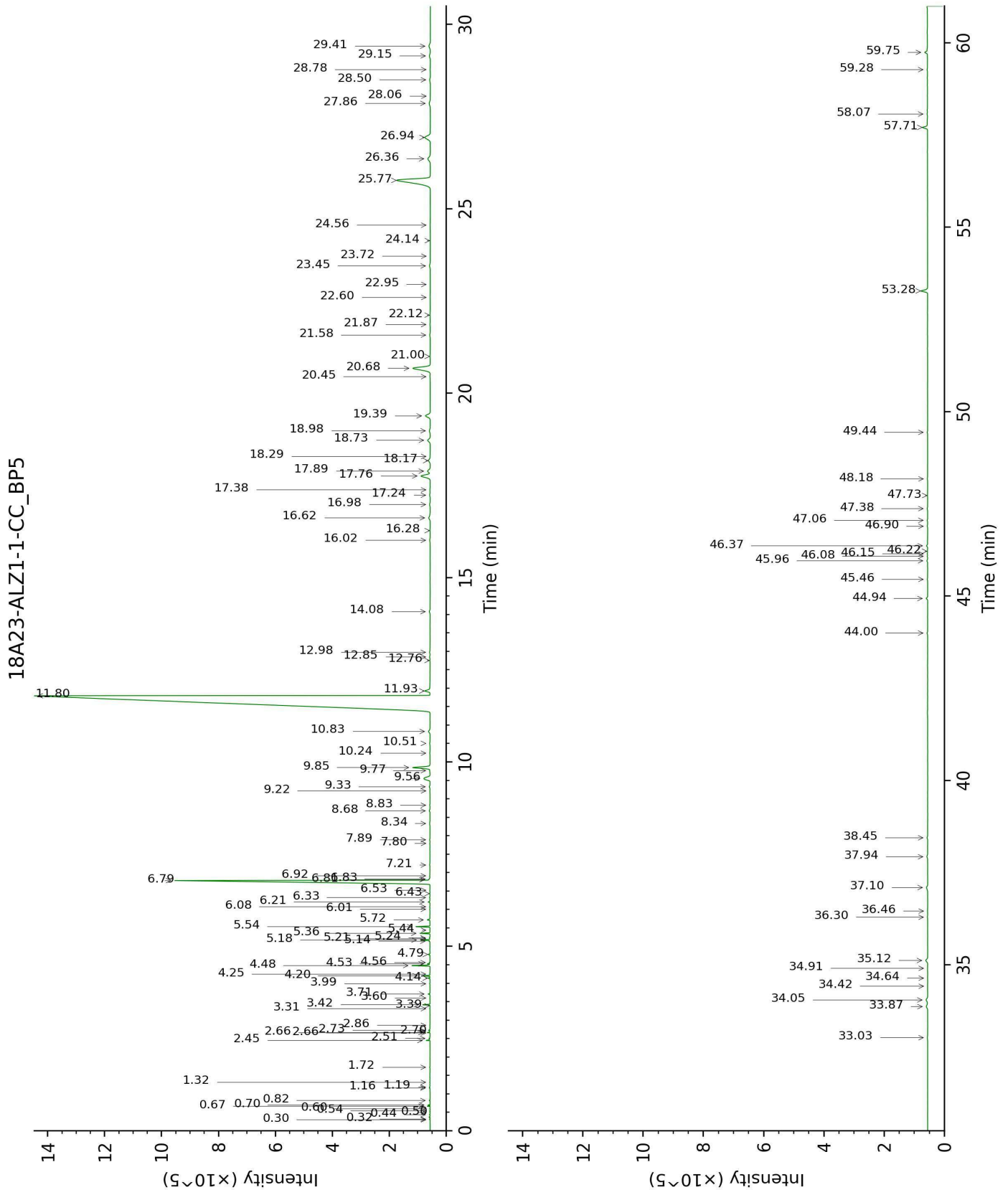
OTHER DATA

Physical aspect : Clear liquid

Refractive index : 1.4570 ± 0.0003 (20 °C)

CONCLUSION

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



18A23-ALZ1-1-CC_WAX

