

GC/MS BATCH NUMBER: S10102

ESSENTIAL OIL: SAGE
BOTANICAL NAME: SALVIA OFFICINALIS
ORIGIN: SPAIN

KEY CONSTITUENTS PRESENT IN THIS BATCH OF SAGE OIL	%
α -THUJONE	25.1
CAMPHOR	21.7
1,8-CINEOLE	9.8
β -THUJONE	6.2
CAMPHENE	5.8
α -HUMULENE	5.7
β -CARYOPHYLLENE	5.0
α -PINENE	4.7
BORNEOL	3.5
β -PINENE	2.3
LIMONENE	1.7
γ -TERPINENE	1.6
BORNYL ACETATE	1.5

Comments from Robert Tisserand: Excellent green-camphoraceous odor profile. All ten key ISO constituents are within range of the standard.

Date : November 27, 2017

SAMPLE IDENTIFICATION

Internal code : 17K21-PTH5-1-CC

Customer identification : Sage - Spain - S10102612R

Type : Essential oil

Source : *Salvia officinalis*

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 : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-11-27

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> -Salvene	2.21	843	0.07	0.06	843	0.76	Normonoterpene
<i>trans</i> -Salvene	2.32	852	0.01	0.02	860	0.81	Normonoterpene
<i>cis</i> -Hex-3-en-1-ol	2.50	865	0.03	0.05	1320	5.37	Aliphatic alcohol
Hexanol	2.71	881	0.01	0.01	1297	5.02	Aliphatic alcohol
Tricyclene	3.22	915	0.54	0.58	922	1.03	Monoterpene
α -Thujene	3.31	920	0.52	5.12	950	1.14*	Monoterpene
α -Pinene	3.43	927	4.70	[5.12]	950	1.14*	Monoterpene
Camphene	3.72*	944	5.74	5.67	1003	1.42	Monoterpene
α -Fenchene	3.72*	944	[5.74]	0.03	996	1.36	Monoterpene
Thuja-2,4(10)-diene	3.80	949	tr	0.11	1055	1.93*	Monoterpene
Sabinene	4.14	969	0.09	[0.11]	1055	1.93*	Monoterpene
β -Pinene	4.20	973	2.27	2.11	1041	1.77	Monoterpene
Myrcene	4.48*	989	0.89	0.93	1118	2.51*	Monoterpene
Octen-3-ol	4.48*	989	[0.89]	0.07	1407	6.75*	Aliphatic alcohol
Pseudolimonene	4.70	1002	0.03	[0.93]	1118	2.51*	Monoterpene
α -Phellandrene	4.75	1005	0.06	0.04	1112	2.44	Monoterpene
α -Terpinene	4.94	1015	0.05	[0.93]	1118	2.51*	Monoterpene
<i>para</i> -Cymene	5.19*	1028	2.07	0.46	1210	3.72*	Monoterpene
Limonene	5.19*	1028	[2.07]	11.49	1147	2.90*	Monoterpene
1,8-Cineole	5.25	1032	9.79	[11.49]	1147	2.90*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.35	1037	0.04	1.58	1190	3.47*	Monoterpene
<i>trans</i> - β -Ocimene	5.53	1047	0.01	[0.46]	1210	3.72*	Monoterpene
γ -Terpinene	5.73	1057	1.62	[1.58]	1190	3.47*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	6.00	1073	0.01				Monoterp. alcohol
<i>cis</i> -Sabinene hydrate	6.09	1077	0.07	[0.07]	1407	6.75*	Monoterp. alcohol
Terpinolene	6.20	1083	0.56	0.53	1225	3.96	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.35	1091	0.02	0.01	1398	6.59	Monoterp. alcohol
α -Thujone	6.84*	1111	25.38	25.14	1351	5.85	Monoterp. ketone
Linalool	6.84*	1111	[25.38]	0.37	1493	8.77	Monoterp. alcohol
β -Thujone	7.06	1119	6.24	6.34	1366	6.09	Monoterp. ketone
Camphor	7.88	1149	21.72	22.33	1426	7.19*	Monoterp. ketone
3-Thujanol	8.16	1159	0.02	3.57	1616	13.20*	Monoterp. alcohol
Borneol	8.71	1179	3.46	[3.57]	1616	13.20*	Monoterp. alcohol
Terpinen-4-ol	8.83	1184	0.45	5.55	1523	9.69*	Monoterp. alcohol
α -Terpineol	9.50	1204	0.05	0.04	1625	13.66	Monoterp. alcohol
Bornyl acetate	12.93	1279	1.53	1.59	1507	9.10	Monoterp. ester
α -Copaene	17.70	1357	0.11	[22.33]	1426	7.19*	Sesquiterpene
β -Caryophyllene	20.71	1402	5.04	[5.55]	1523	9.69*	Sesquiterpene
α -Humulene	23.56	1435	5.65	5.72	1586	11.97	Sesquiterpene
allo-Aromadendrene	23.72	1437	0.06	0.06	1563	11.15	Sesquiterpene
Caryophyllene oxide	33.84	1569	0.06	0.05	1844	27.13	Sesquiterp. ether

Viridiflorol	34.87	1583	0.15	0.15	1976	35.16	Sesquiterp. alcohol
Humulene epoxide II	35.51	1592	0.04	0.05	1897	31.02	Sesquiterp. ether
Manool	49.37	2039	0.02				Diterp. alcohol
Total identified			99.18%	99.83%			

*: 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

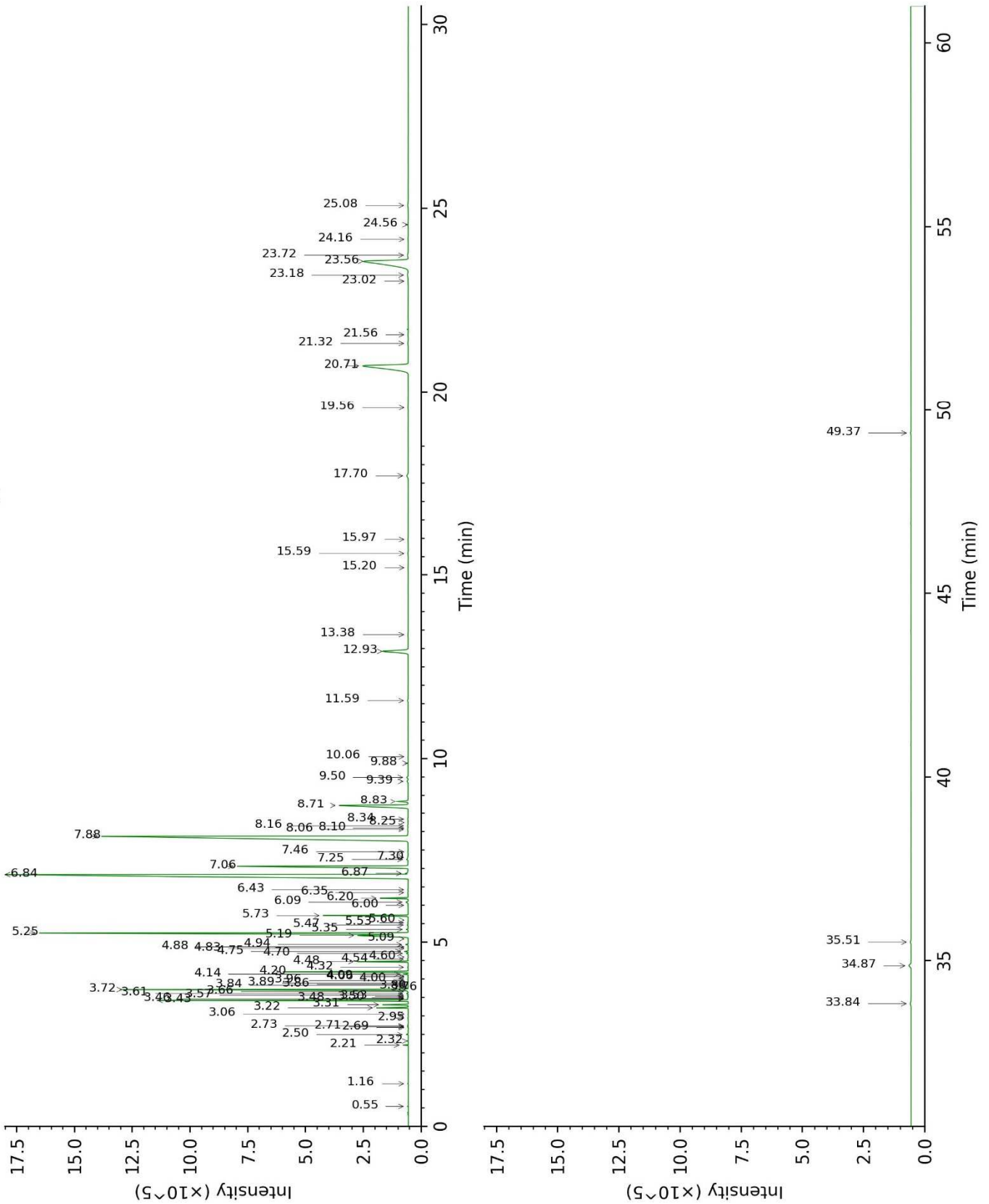
Physical aspect : Faintly yellow liquid

Refractive index : 1.4663 ± 0.0003 (20 °C)

CONCLUSION

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

17K21-PTH5-1-CC_BP5



17K21-PTH5-1-CC_WAX

